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NEWS	11	DEC 11	CAS REGISTRY chemical nomenclature enhanced
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NEWS	15	DEC 18	CA/Caplus patent kind codes updated
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NEWS	17	DEC 18	MEDLINE updated in preparation for 2007 reload
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NEWS	19	JAN 08	CHEMLIST enhanced with New Zealand Inventory of Chemicals
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***** STN Columbus *****

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=> file medline embase biosis scisearch caplus		
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=> s recombinant Escherichia coli
L1 8476 RECOMBINANT ESCHERICHIA COLI

=> s l1 and heat-killed
L2 0 L1 AND HEAT-KILLED

=> s l1 and modified allergen
L3 0 L1 AND MODIFIED ALLERGEN

=> s Escherichia coli
L4 1162694 ESCHERICHIA COLI

=> s l4 and recombinant allergen
L5 462 L4 AND RECOMBINANT ALLERGEN

=> s l5 and modified
L6 19 L5 AND MODIFIED

=> s l6 and heat-killed
L7 0 L6 AND HEAT-KILLED

=> dup remove l6
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L8 9 DUP REMOVE L6 (10 DUPLICATES REMOVED)

=> d l8 1-9 cbib abs

L8 ANSWER 1 OF 9 MEDLINE on STN
2006548078. PubMed ID: 16956374. Ca2+-binding allergens from olive pollen exhibit biochemical and immunological activity when expressed in stable transgenic Arabidopsis. Ledesma Amalia; Moral Veronica; Villalba Mayte; Salinas Julio; Rodriguez Rosalia. (Dpto. Bioquímica y Biología Molecular I, Universidad Complutense, Madrid, Spain.) The FEBS journal, (2006 Oct) Vol. 273, No. 19, pp. 4425-34. Electronic Publication: 2006-09-05. Journal code: 101229646. ISSN: 1742-464X. Pub. country: England: United Kingdom. Language: English.

AB Employing transgenic plants as alternative systems to the conventional **Escherichia coli**, *Pichia pastoris* or baculovirus hosts

to produce **recombinant allergens** may offer the possibility of having available edible vaccines in the near future. In this study, two EF-hand-type Ca²⁺-binding allergens from olive pollen, Ole e 3 and Ole e 8, were produced in transgenic *Arabidopsis thaliana* plants. The corresponding cDNAs, under the control of the constitutive CaMV 35S promoter, were stably incorporated into the *Arabidopsis* genome and encoded recombinant proteins, AtOle e 3 and AtOle e 8, which exhibited the molecular properties (i.e. MS analyses and CD spectra) of their olive and/or *E. coli* counterparts. Calcium-binding assays, which were carried out to assess the biochemical activity of AtOle e 3 and AtOle e 8, gave positive results. In addition, their mobilities on SDS/PAGE were according to the conformational changes derived from their Ca²⁺-binding capability. The immunological behaviour of *Arabidopsis*-expressed proteins was equivalent to that of the natural- and/or *E. coli*-derived allergens, as shown by their ability to bind allergen-specific rabbit IgG antiserum and IgE from sensitized patients. These results indicate that transgenic plants constitute a valid alternative to obtain allergens with structural and immunological integrity not only for scaling up production, but also to develop new kind of vaccines for human utilization.

- L8 ANSWER 2 OF 9 MEDLINE on STN DUPLICATE 1
 2006223169. PubMed ID: 16630158. Structural, immunological and functional properties of natural recombinant Pen a 1, the major allergen of Brown Shrimp, *Penaeus aztecus*. Reese G; Schick Tanz S; Lauer I; Randow S; Luthkopf D; Vogel L; Lehrer S B; Vieths S. (Paul-Ehrlich-Institut, Department of Allergology, Langen, Germany.. reege@pei.pe) . Clinical and experimental allergy : journal of the British Society for Allergy and Clinical Immunology, (2006 Apr) Vol. 36, No. 4, pp. 517-24. Journal code: 8906443. ISSN: 0954-7894. Pub. country: England: United Kingdom. Language: English.
- AB BACKGROUND: **Recombinant allergens** are considered the basis for new diagnostic approaches and development of novel strategies of allergen-specific immunotherapy. As Pen a 1 from brown shrimp *Penaeus aztecus* is the only major allergen of shrimp and binds up to 75% of all shrimp-specific IgE antibodies this molecule may be an excellent model for the usage of allergens with reduced IgE antibody-binding capacity for specific immunotherapy. AIM: The aim was to clone, express and characterize a full-length recombinant Pen a 1 molecule and compare it with natural Pen a 1 in regard to structural and immunological parameters such as IgE antibody capacity and ability to induce IgE-mediated mediator release. METHODS: Total RNA was isolated from *P. aztecus* and a rapid amplification of cDNA ends (5' RACE) was performed to obtain full-length cDNA coding for Pen a 1. Using a gene-specific primer, PCR was performed and full-length cDNA was cloned and sequenced. Recombinant His-tagged Pen a 1 was isolated from *Escherichia coli* under native conditions by immobilized metal affinity chromatography. Secondary structure of natural and recombinant Pen a 1 was compared by circular dichroism (CD) spectroscopy, and the IgE antibody-binding capacity evaluated by RAST. The allergenic potency was tested by the capability of natural and recombinant Pen a 1 to induce mediator release in a murine and human in vitro model of IgE-mediated type I allergy. RESULTS: The deduced amino-acid sequence was 284 residues long and amino-acid sequence identities with allergenic and non-allergenic tropomyosins ranged from 80% to 99% and 51% to 58%, respectively. The analysis of the secondary structure of natural and recombinant Pen a 1 by CD spectroscopic analysis showed that both nPen a 1 and rPen a 1 had alpha-helical conformation that is typical for tropomyosin. The IgE antibody binding capacities of nPen a 1 and rPen a 1 were found to be essentially identical by RAST. The mediator release experiments using both wild-type and humanized rat basophilic leukaemia 30/25 cells showed that rPen a 1 and nPen a 1 induced a similar level of mast cell activation. CONCLUSIONS: Recombinant Pen a 1 and natural Pen a 1 are structurally and immunologically identical and

rPen a 1 may be used as the basis for component-resolved diagnosis and the generation of **modified** shrimp tropomyosin for allergen-specific immunotherapy. The results of the animal studies indicate that C3H/HeJ mice that were sensitized with shrimp extract in combination with cholera toxin as adjuvant may be a suitable model to study shrimp allergy.

- L8 ANSWER 3 OF 9 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
2006254921 EMBASE Recombinant expression systems for allergen vaccines. Singh M.B.; Bhalla P.L.. M.B. Singh, Institute of Land and Food Resources, The University of Melbourne, Parkville, Vic. 3010, Australia. mohan@unimelb.edu.au. Inflammation and Allergy - Drug Targets Vol. 5, No. 1, pp. 53-59 2006.
Refs: 60.
ISSN: 1871-5281. Pub. Country: Netherlands. Language: English. Summary Language: English.
Entered STN: 20060615. Last Updated on STN: 20060615
- AB Allergen immunotherapy of future is likely to be based on allergy vaccines that contain engineered allergens **modified** to abolish or substantially reduce their IgE-binding activity in order to remove the risk of unwanted anaphylactic responses. The development of efficient systems for the production of **recombinant allergens** in sufficient quantities is requirement for establishing use of engineered allergens as components of allergy vaccines. This review outlines relative advantages and disadvantages of various heterologous systems for production of **recombinant allergens**. Microbial systems are most convenient and cost effective platforms for the production of **recombinant allergens**. However, lack of post-translational processing implies that some allergens have to be expressed in eukaryotic systems for proper folding and post-translational modifications such as glycosylation. Yeast systems can yield high levels of **recombinant allergens** but often are associated with hyper- glycosylation problems. Mammalian cell culture systems offer suitable post -translational modifications but are nearly hundred fold more expensive than microbial systems. The use of plants as bio-factories for production of **recombinant allergens** is emerging as a very attractive option as plants-based production system offer several advantages over other expression systems such as post translational processing of proteins, low production costs, scale up ability and enhanced safety due to absence of animal or human pathogens. .COPYRG.T. 2006 Bentham Science Publishers Ltd.
- L8 ANSWER 4 OF 9 MEDLINE on STN
2004221551. PubMed ID: 15119037. Expression of allergens in E. coli and plants--benefits and drawbacks. Breiteneder Heimo; Wagner Birgit. (Dept. of Pathophysiology, University of Vienna, Wahringer Gurtel 18-20, A-1090 Vienna.) Arbeiten aus dem Paul-Ehrlich-Institut (Bundesamt für Sera und Impfstoffe) zu Frankfurt a.M., (2003) No. 94, pp. 178-87. Ref: 51. Journal code: 8912864. ISSN: 0936-8671. Pub. country: Germany: Germany, Federal Republic of. Language: English.
- AB **Recombinant allergens** are quickly becoming the reagents of choice for diagnosis and therapy of type I allergic diseases. Consequently, the different methods for the production of recombinant proteins that are available today are of great interest to allergologists. Without doubt, bacterial expression will continue to play a pivotal role. In addition, plant-based expression systems will be needed to overcome problems inherent in the E. coli systems and to allow the production of glycoallergens or allergens of more complex folding.
- L8 ANSWER 5 OF 9 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN
2003:74387 The Genuine Article (R) Number: 632HU. Art v 1, the major allergen

of mugwort pollen, is a modular glycoprotein with a defensin-like and a hydroxyproline-rich domain. Himly M; Jahn-Schmid B; Dedic A; Kelemen P; Wopfner N; Altmann F; van Ree R; Richter K; Richter K; Ebner C; Ferreira F (Reprint). Salzburg Univ, Inst F Genet U Allg Biol, Hellbrunnerstr 34, A-5020 Salzburg, Austria (Reprint); Salzburg Univ, Inst Genet & Gen Biol, A-5020 Salzburg, Austria; Univ Vienna, Inst Pathophysiol, A-1090 Vienna, Austria; Univ Agr Vienna, Inst Chem, A-1190 Vienna, Austria; Sanquin Res CLB, Dept Immunopathol, NL-1066 CX Amsterdam, Netherlands. fatima.ferreira@mh.sbg.ac.at. FASEB JOURNAL (NOV 2002) Vol. 16, No. 13, pp. 106+. ISSN: 0892-6638. Publisher: FEDERATION AMER SOC EXP BIOL, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3998 USA. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

- AB In late summer, pollen grains originating from Compositae weeds (e.g., mugwort, ragweed) are a major source of allergens worldwide. Here, we report the isolation of a cDNA clone coding for Art v 1, the major allergen of mugwort pollen. Sequence analysis showed that Art v 1 is a secreted allergen with an N-terminal cysteine-rich domain homologous to plant defensins and a C-terminal proline-rich region containing several (Ser/Ala) (Pro) (2-4) repeats. Structural analysis showed that some of the proline residues in the C-terminal domain of Art v 1 are posttranslationally modified by hydroxylation and O-glycosylation. The O-glycans are composed of 3 galactoses and 9-16 arabinoses linked to a hydroxyproline and represent a new type of plant O-glycan. A 3-D structural model of Art v 1 was generated showing a characteristic "head and tail" structure. Evaluation of the antibody binding properties of natural and recombinant Art v 1 produced in *Escherichia coli* revealed the involvement of the defensin fold and posttranslational modifications in the formation of epitopes recognized by IgE antibodies from allergic patients. However, posttranslational modifications did not influence T-cell recognition. Thus, recombinant nonglycosylated Art v 1 is a good starting template for engineering hypoallergenic vaccines for weed-pollen therapy.

L8 ANSWER 6 OF 9 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

2000:267299 The Genuine Article (R) Number: 297YX. **Recombinant allergens:** application to diagnostic and therapeutic perspectives. Pauli G (Reprint); Deviller P. Hop Univ Strasbourg, Serv Pneumol, BP 426, F-67091 Strasbourg, France (Reprint); Hop Univ Strasbourg, Serv Pneumol, F-67091 Strasbourg, France. REVUE DES MALADIES RESPIRATOIRES (FEB 2000) Vol. 17, No. 1BIS, pp. 293-303. ISSN: 0761-8425. Publisher: MASSON EDITION, 120 BLVD SAINT-GERMAIN, 75280 PARIS 06, FRANCE. Language: French.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

- AB Techniques of generic engineering applied to allergens have enabled the production of **recombinant allergens**. The validation of **recombinant allergens** implies that their immunological activity and their identity with natural allergens might be confirmed by in vitro and in vivo techniques carried out on a sufficiently large number of allergic subjects. Currently available results for the principal pneumoallergens are reported. Thus the work of validating **recombinant allergen** BeT1 has been confirmed by in vitro tests and also by skin tests and nasal and bronchial provocation tests. The association of four **recombinant allergens** of phleole has enabled the detection in vitro of sensitization to germinated pollens in 94.5% of patients. For mites the validity of group 2 **recombinant allergens** has been confirmed. A system enabling the expression of glycosylation of recombinant proteins was necessary to validate recombinant proteins in group 1 allergens. The **recombinant allergen** Blot5 is recognised as bring effective in the detection of sensitization to *Blomia tropicalis*, a domestic allergen in sub tropical countries. The **recombinant allergens** Bla g 4 and Bla g 5 have been tested in vitro and in

vivo and reactions were positive in nearly 50% of subjects sensitive to cockroaches. The recombinant Asp f 1 has been tested in subjects suffering from allergic bronchopulmonary aspergillosis and is positive in 60-85% of cases.

Some studies are available for **recombinant allergens** of certain animal antigens (Equ c 1, Bos d 2). The consequences of clarifying **recombinant allergens** are then analysed : obtaining better standardised allergens for diagnostic tests, studying the spectrum of specificities of IgE induced by an allergen, the quantification of specific IgE, a better approach to mixed allergies with the help of **recombinant allergens** of the principal mixed allergens. Some recent progress has led to the production of **modified recombinant allergens** : the synthesis of recombinant polypeptides corresponding to T epitopes, the production of isoform **recombinant allergens** with reduced allergenic activity, the production of **recombinant allergens** of **modified** allergenic molecules by directed mutations and the production of recombinant fragments of allergenic molecules. The use of **modified recombinant allergens** is a way of permitting research which would, in the future, lead to new modalities of specific immunotherapy.

- L8 ANSWER 7 OF 9 MEDLINE on STN DUPLICATE 2
1999242424. PubMed ID: 10224369. The importance of **recombinant allergens** for diagnosis and therapy of IgE-mediated allergies. Kraft D; Ferreira F; Vrtala S; Breiteneder H; Ebner C; Valenta R; Susani M; Breitenbach M; Scheiner O. (Institute of General and Experimental Pathology, University of Vienna, Austria.) International archives of allergy and immunology, (1999 Feb-Apr) Vol. 118, No. 2-4, pp. 171-6. Journal code: 9211652. ISSN: 1018-2438. Pub. country: Switzerland. Language: English.
- AB In the past 10 years, a considerable number of cDNAs coding for allergens have been isolated and expressed. Intensive investigations showed that **recombinant allergens** and their respective natural counterparts possess comparable properties with respect to structure, function and interaction with the immune system. Recent studies documented that in vitro as well as in vivo diagnosis of IgE-mediated allergic diseases can be successfully improved by the application of **recombinant allergens**. In addition, new strategies for a safer specific immunotherapy (SIT) have been developed based on the knowledge of the primary structures of allergens. Naturally occurring isoforms of allergens as well as **recombinant allergens** with **modified** amino acid sequences show very low IgE binding capacity but strong T cell-stimulatory activity and represent possible candidates. In case of Bet v 1, the major birch pollen allergen, isoforms d, g and l and a Bet v 1a mutant, produced by site-directed mutagenesis resulting in 6 amino acid exchanges, fulfilled the above mentioned criteria. In a third approach, two adjacent peptides covering the entire Bet v 1a sequence were produced in an *Escherichia coli* expression system. These peptides contained most of the relevant T cell epitopes, but lost their IgE binding capacity and, thus, their ability to activate mast cells and basophils of sensitized patients. Our results suggest that allergen variants (isoforms, mutants, T cell epitope-containing peptides) may be used as 'hypoallergenic agents' in SIT.
- L8 ANSWER 8 OF 9 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN
1998:98094 The Genuine Article (R) Number: YT529. Diagnostic value of **recombinant allergens**.. Pauli G (Reprint). Hop Univ Strasbourg, Serv Pneumol, BP 426, F-67091 Strasbourg, France (Reprint); Hop Univ Strasbourg, Serv Pneumol, F-67091 Strasbourg, France. REVUE

FRANCAISE D ALLERGOLOGIE ET D IMMUNOLOGIE CLINIQUE (1997) Vol. 37, No. 8, pp. 1093-1101. ISSN: 0335-7457. Publisher: EDITIONS SCIENTIFIQUES MEDICALES ELSEVIER, 23 RUE LINOIS, 75724 PARIS CEDEX 15, FRANCE. Language: French.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Genetic engineering techniques applied to allergens have allowed the

production of **recombinant allergens**. Validation of **recombinant allergens** demands confirmation of their immunological activity and their identity with natural allergens by in vivo and in vitro techniques on a sufficiently large number of allergic subjects. The results currently available for the main respiratory allergens are reported. For example, the validity of the birch **recombinant allergen** Bet v 1 was confirmed by in vitro tests, but also by skin tests and nasal and bronchial challenge tests. The combination of four **recombinant allergens** of timothy allowed the in vitro detection of sensitization to Gramineae pollens in 94.5% of patients. The validity of up to 2 **recombinant allergens** has been confirmed for house dust mites. Systems of expression allowing glycosylation of recombinant proteins were necessary to validate group 1 **recombinant allergen** proteins.

Recombinant allergen Blo t 5 has been tested in vitro and in vivo, and was found to be effective in the detection of sensitization to *Blomia tropicalis*, a domestic allergen in subtropical countries. Only **recombinant allergen** Bla g 4 has been tested in vitro and in vivo, with positive reactions in almost 50% of subjects sensitized to cockroaches. Recombinant Asp f 1 was tested in subjects suffering from allergic bronchopulmonary aspergillosis, and was positive in 60 to 85% of cases. Studies are also available for **recombinant allergens** of phospholipase A2, the major allergen of bee venom. The consequences of the development of **recombinant allergens** are then analysed: better standardized allergens for diagnostic tests, study of the spectrum of specificities of the IgE induced by an allergen, quantification of specific IgE, better approach to cross-allergies using **recombinant allergens** of the main cross allergens. The application of **recombinant allergens** to basic research has led to production of **modified recombinant allergens**: synthesis of recombinant polypeptides corresponding to T epitopes, production of **recombinant allergens** isoforms with reduced allergenic activity, production of **recombinant allergens** of allergenic molecules **modified** by directed mutations. The use of these **modified recombinant allergens** is one line of research which, in the future, may lead to new modalities of specific desensitization. Other lines of research are also under investigation: inhibition of antigen-antibody reactions by the use of recombinant Fab-blocking molecules, and recombinant molecules: of immunodominant haptens.

L8 ANSWER 9 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN DUPLICATE 3

1993:90720 Document No.: PREV199395045916. Expression and thrombin cleavage of Poa p IX **recombinant allergens** fused to glutathione-S-transferase. Olsen, Egil; Mohapatra, Shyam S. [Reprint author]. Dep. Immunology, Univ. Manitoba, 608-730 Williams Avenue, Winnipeg, Man. R3E 0W3, Canada. International Archives of Allergy and Immunology, (1992) Vol. 98, No. 4, pp. 343-348. CODEN: IAAIEG. ISSN: 1018-2438. Language: English.

AB The high-level expression and purification of Poa p IX recombinant grass pollen allergens were examined utilizing a **modified pGEX** plasmid, designated as pGEX 2T-1. This vector permits frame-1 ligation of lambda-gt11 cDNA inserts and cleavage of the recombinant allergenic protein from the fusion partner glutathione S-transferase. The expression

of the fusion proteins in water-soluble form varied among the transformants of the same bacterial strain and also between different host strains. Purification of the fusion proteins by affinity chromatography employing glutathione agarose gel revealed that proteases in the bacterial lysate bound to the gel and were co-eluted with the fusion proteins. These proteases, which specifically degraded the recombinant proteins to varying degrees, were inhibited by both of the inhibitors, phenylmethylsulfonyl fluoride and aprotinin. Cleavage by thrombin of the fusion proteins indicated that the structure of the individual protein affected the thrombin accessibility to the cleavage site. Increased concentration of thrombin partly compensated this effect, but resulted in a broader specificity of the enzyme. By contrast, cleavage of the fusion protein when it was still attached to the glutathione gel was convenient and led to purification of the product devoid of proteolytic activity. Since almost all the **recombinant allergens** have been cloned in lambda-gt11 vector, the pGEX 2T-1 vector reported herein will facilitate the synthesis, purification of the corresponding allergenic proteins or their peptides in soluble and biologically active forms.

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FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 12:13:14 ON 09 JAN 2007

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L1      8476 S RECOMBINANT ESCHERICHIA COLI
L2      0 S L1 AND HEAT-KILLED
L3      0 S L1 AND MODIFIED ALLERGEN
L4      1162694 S ESCHERICHIA COLI
L5      462 S L4 AND RECOMBINANT ALLERGEN
L6      19 S L5 AND MODIFIED
L7      0 S L6 AND HEAT-KILLED
L8      9 DUP REMOVE L6 (10 DUPLICATES REMOVED)
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=> s E coli
L9      387782 E COLI
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=> s l9 and modified allergen
L10     0 L9 AND MODIFIED ALLERGEN
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=> s l9 and killed
L11     3911 L9 AND KILLED
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=> s l11 and allergen
L12     1 L11 AND ALLERGEN
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=> d l12 cbib abs

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L12 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
2004:1121739 Document No. 142:278913 Sensitization and allergic response and
intervention therapy in animal models. Helm, Ricki M.; Burks, A. Wesley
(Department of Microbiology/Immunology, University of Arkansas for Medical
Sciences/ACHRI/ACNC, Little Rock, AR, 72202-3591, USA). Journal of AOAC
International, 87(6), 1441-1447 (English) 2004. CODEN: JAINEE. ISSN:
1060-3271. Publisher: AOAC International.
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AB A review is presented of 3 murine models and a swine neonatal model used to investigate immunotherapeutic options. In Model 1, mutation of linear IgE-binding epitopes of Ara h 1 for the preparation of a hypoallergenic Ara h 1 is discussed with respect to expression in transgenic tobacco plants and correct folding following expression in the pET16b construct. In Model 2, the mutations of Ara h 1 were assessed for use as an immunotherapeutic

agent. Although some protective benefit was observed with the modified Ara h 1 protein, animals desensitized with heat-killed **E. coli** preps. showed increased protection to challenge. In Model 3, soybean homologs to peanut proteins were investigated to determine if soybean immunotherapy can potentially provide benefit to peanut-allergic subjects. Although some protection was provided, addnl. experimentation with respect to optimal doses for sensitization and challenge will need to be investigated. In Model 4, the neonatal swine model was used to profile different foods (low to moderate to high sensitizing) similar to food allergies in humans. Evidence suggests such feasibility; however, threshold levels for sensitization and allergic responses will need addnl. study. In summary, murine and swine animal models are being used to address immunotherapeutic avenues and investigation into the mechanisms of food-allergic sensitization.

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=> s heat-killed E coli
L13      230 HEAT-KILLED E COLI
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=> s l13 and vaccine
L14      15 L13 AND VACCINE
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=> dup remove l14
PROCESSING COMPLETED FOR L14
L15      9 DUP REMOVE L14 (6 DUPLICATES REMOVED)
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=> d l15 1-9 cbib abs
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L15 ANSWER 1 OF 9 MEDLINE on STN
2004340100. PubMed ID: 15189567. NF-kappaB p50 facilitates neutrophil
accumulation during LPS-induced pulmonary inflammation. Mizgerd Joseph P;
Lupa Michal M; Spieker Matt S. (Physiology Program, Harvard School of
Public Health, Boston, MA, 02115 USA.. jmizgerd@hsph.harvard.edu) . BMC
immunology [electronic resource], (2004 Jun 9) Vol. 5, pp. 10. Electronic
Publication: 2004-06-09. Journal code: 100966980. E-ISSN: 1471-2172. Pub.
country: England: United Kingdom. Language: English.
```

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AB BACKGROUND: Transcription factors have distinct functions in regulating
immune responses. During Escherichia coli pneumonia, deficiency of
NF-kappaB p50 increases gene expression and neutrophil recruitment,
suggesting that p50 normally limits these innate immune responses.
p50-deficient mice were used to determine how p50 regulates responses to a
simpler, non-viable bacterial stimulus in the lungs, E. coli
lipopolysaccharide (LPS). RESULTS: In contrast to previous results with
living E. coli, neutrophil accumulation elicited by E. coli LPS in the
lungs was decreased by p50 deficiency, to approximately 30% of wild type
levels. Heat-killed E. coli
induced neutrophil accumulation which was not decreased by p50 deficiency,
demonstrating that bacterial growth and metabolism were not responsible
for the different responses to bacteria and LPS. p50 deficiency increased
the LPS-induced expression of kappaB-regulated genes essential to
neutrophil recruitment, including KC, MIP-2, ICAM-1, and TNF-alpha
suggesting that p50 normally limited this gene expression and that
decreased neutrophil recruitment did not result from insufficient
expression of these genes. Neutrophils were responsive to the chemokine
KC in the peripheral blood of p50-deficient mice with or without
LPS-induced pulmonary inflammation. Interleukin-6 (IL-6), previously
demonstrated to decrease LPS-induced neutrophil recruitment in the lungs,
was increased by p50 deficiency, but LPS-induced neutrophil recruitment
was decreased by p50 deficiency even in IL-6 deficient mice. CONCLUSION:
p50 makes essential contributions to neutrophil accumulation elicited by
LPS in the lungs. This p50-dependent pathway for neutrophil accumulation
can be overcome by bacterial products other than LPS and does not require
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L15 ANSWER 2 OF 9 MEDLINE on STN DUPLICATE 1
 96101747. PubMed ID: 7494229. Induction of T-cell immunity against Ras oncoproteins by soluble protein or Ras-expressing *Escherichia coli*. Fenton R G; Keller C J; Hanna N; Taub D D. (Division of Clinical Sciences, National Cancer Institute, National Cancer Institute-Frederick Cancer Research and Development Center (NCI-FCRDC), MD 21702, USA.) Journal of the National Cancer Institute, (1995 Dec 20) Vol. 87, No. 24, pp. 1853-61. Journal code: 7503089. ISSN: 0027-8874. Pub. country: United States. Language: English.

AB BACKGROUND: Point mutations in the ras proto-oncogene that activate its oncogenic potential occur in approximately 30% of human cancers. Previous studies have demonstrated that T-cell immunity against some forms of mutant Ras proteins could be elicited, and some effectiveness against tumors expressing activated Ras has been reported. PURPOSE: The goal of this study was to determine if immunization of mice with two forms of mutant Ras protein can induce high levels of Ras mutation-specific T-cell immunity in vitro and tumor regression in vivo. METHODS: Mice (BALB/c or C3H/HeJ) were immunized subcutaneously at 2-week intervals with purified Ras oncoproteins mixed with the immunologic adjuvants Antigen Formulation or QS-21, both of which have been shown to enhance the induction of T-cell-mediated immunity when included as components of soluble protein **vaccines**. In some experiments, mice were immunized directly with heat-killed *Escherichia coli* that had been induced to express one of the mutant Ras proteins. Spleen cells plus lymph node cells from Ras-immunized mice were tested in vitro for lysis of syngeneic Ras-expressing tumor cells and proliferation in response to mutant Ras peptides. For some of the cytolytic activity experiments, the spleen cells were grown under TH1 conditions (growth in presence of interleukin 2, interferon gamma, and an antibody directed against interleukin 4 to stimulate a cell-mediated immune response) or TH2 conditions (growth in presence of interleukins 2 and 4 to stimulate a humoral immune response). The specificity of immunity was examined in vivo by challenge of Ras-immunized mice with syngeneic tumor cells expressing mutant Ras oncoproteins (HaBalb, i.e., BALB/c mouse cells expressing Ras with arginine substituted at amino acid position 12 [Arg 12 Ras]; C3H/61, i.e., C3H/HeJ mouse cells expressing Ras with leucine substituted at position 61 [Leu 61 Ras]). Ten mice per group were used in each experiment. RESULTS: Proliferative and cytolytic T-cell responses directed against the Arg 12 Ras protein were generated in BALB/c mice, resulting in protection against challenge with cells expressing Arg 12 Ras and therapeutic benefit in mice bearing established tumors expressing this protein. In C3H/HeJ mice, high levels of cytolytic and proliferative responses were induced against Leu 61 Ras. Immunization with **heat-killed E. coli** genetically engineered to express Leu 61 Ras also led to the induction of anti-Ras T-cell immunity. T cells grown under TH1 conditions were cytolytic against Ras-transformed tumor cells, whereas those grown under TH2 conditions were not. CONCLUSIONS: Immunization as described here leads to Ras mutation-specific antitumor immunity in vitro and in vivo, with therapeutic efficacy in an established tumor model.

L15 ANSWER 3 OF 9 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
 1985:233270 Document No.: PREV198579013266; BA79:13266. IMMUNOCONGLUTININ LEVELS IN CHICKS VACCINATED WITH *SALMONELLA-GALLINARUM* 9R *SALMONELLA-PULLORUM* E-79 OR *ESCHERICHIA-COLI* 020 **VACCINES** AND EXPERIMENTALLY INFECTED WITH *SALMONELLA-GALLINARUM*. JAISWAL T N [Reprint author]; MITTAL K R. COLLEGE OF VET SCIENCE AND ANIMAL HUSBANDRY, GUJARAT AGRIC UNIVERSITY, SK NAGAR, DANTIWADA, BANASKANTHA-395 506. Indian Veterinary Medical Journal, (1984) Vol. 8, No. 1, pp. 9-13. CODEN: IVMJDL. ISSN: 0250-5266. Language: ENGLISH.

AB Vaccination of chicks with live *S. gallinarum* (9R) **vaccines** with

or without adjuvant caused an initial fall in the levels of pre-existing autostimulated immunoconglutinin (IK) by the 10th day but a slow increase in the IK level by 21st day postvaccination. Heat-killed *S. pollorum* (E79) and **heat-killed E. coli**

(020) **vaccines** caused no such reduction in the IK level during the post-vaccination period. An increase in the IK level during post-vaccination period in these groups of chickens were observed. Challenge infection with *S. gallinarum* (V) in all the vaccinated groups of birds showed a marked decrease in IK level during the early challenge period indicating the involvement of IK in the host parasite reaction. The IK level increased by the 21st day post-challenge. Evidently, involvement of IK may help in host defense only in initial stages but eventually fail to protect chicks against *S. gallinarum* infection when the causative agent manages to enter the cells when both specific antibodies and nonspecific serum factor like IK fail to be effective.

L15 ANSWER 4 OF 9 MEDLINE on STN DUPLICATE 2
82190380. PubMed ID: 7042755. Induction of immunity against lethal Haemophilus influenzae type b infection by Escherichia coli core lipopolysaccharide. Marks M I; Ziegler E J; Douglas H; Corbeil L B; Braude A I. The Journal of clinical investigation, (1982 Apr) Vol. 69, No. 4, pp. 742-9. Journal code: 7802877. ISSN: 0021-9738. Pub. country: United States. Language: English.

AB Efforts to prevent Haemophilus influenzae type b (HIB) infections in infancy have been hampered by the low immunogenicity of capsular polysaccharide **vaccines** in children younger than 18 mos. In searching for alternate immunogens, we have studied the protective potential of polysaccharide-poor, lipid-rich endotoxin (LPS) core in experimental HIB infections. Because all gram-negative bacteria have similar LPS core structures, we were able to use as **vaccine** the J5 mutant of Escherichia coli 0111, the LPS of which consists only of core components, and thus to avoid problems in interpretation arising from **vaccine** contamination with non-LPS HIB immunogens. Mice were given graded inocula of HIB and developed lethal infection analogous to human HIB disease when virulence was enhanced with mucin and hemoglobin. After active immunization with **heat-killed E. coli** J5, 40/50 (80%) of infected mice survived, compared with 14/50 (28%) of saline-immunized controls (P less than 0.005). Passive immunization with rabbit antiserum against E. coli J5 prevented lethal HIB infection when administered 24 or 72 h before or 3 h after infection. This protection was abolished by adsorption of antiserum with purified J5 LPS, with survival reduced from 14/24 to 0/24 (P less than 0.005). Furthermore, rabbit antiserum to purified J5 LPS gave just as potent protection against death as antiserum to whole J5 cells. These studies demonstrate that immunity to core LPS confers protection against experimental murine HIB infection and provide the framework for a new approach to prevention of human disease from HIB.

L15 ANSWER 5 OF 9 MEDLINE on STN
81281536. PubMed ID: 7023456. Consequences of active or passive immunization of turkeys against Escherichia coli 078. Arp L H. Avian diseases, (1980 Oct-Dec) Vol. 24, No. 4, pp. 808-15. Journal code: 0370617. ISSN: 0005-2086. Pub. country: United States. Language: English.

AB Turkeys were injected at 7 and 14 days of age with live, heat-killed or formalin-killed Escherichia coli 078. Other turkeys were passively immunized at 22 days of age with hyperimmune serum produced against live or **heat-killed E. coli** 078. All turkeys were challenged at 24 days of age with E. coli 078. Turkeys immunized intramuscularly or intratracheally with live E. coli 078 were protected from death, whereas few turkeys given killed E. coli 078 were protected. Passively immunized turkeys were protected from death regardless of whether live or **heat-killed E.**

coli 078 was used to produce the hyperimmune serum. Most turkeys that survived challenge developed septic polysynovitis 2--4 days after challenge.

L15 ANSWER 6 OF 9 MEDLINE on STN

76189304. PubMed ID: 818014. Antiviral activity of *Brucella abortus* preparations; separation of active components. Feingold D S; Keleti G; Youngner J S. Infection and immunity, (1976 Mar) Vol. 13, No. 3, pp. 763-7. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB Injection into mice of heat-killed *Brucella abortus* or aqueous ether-extracted *B. abortus* (Bru-pel) induced a "virus-type" interferon response, with peak titers at 6.5 h. The animals also were protected against challenge with otherwise lethal doses of Semliki forest virus. Extraction of either heated *B. abortus* or BRU-PEL with a mixture of chloroform-methanol (2:1, vol/vol) (C-M) yielded an insoluble residue (extracted cells) and a C-M extract. Neither extracted cells nor C-M extract alone induced interferon or afforded protection against Semliki forest virus infection in mice. Full interferon-inducing and protective activity was restored when extracted cells were recombined with C-M extract. C-M extract from heat-killed *Escherichia coli* also was effective in restoring activity to extracted *Brucella* cells. Neither **heat-killed *E. coli*** nor its C-M extract was active, nor was C-M extracted *E. coli* recombined with the C-M extract from *B. abortus*. These results suggest that the interferon-inducing and antiviral protective properties of *B. abortus* are constituted of a C-M-extractable component that is common to *B. abortus* and *E. coli* and an unextractable component that is unique to *B. abortus*.

L15 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

1974:567727 Document No. 81:167727 Intestinal antibody secretion in the young pig in response to oral immunization with *Escherichia coli*. Porter, P.; Kenworthy, R.; Noakes, D. E.; Allen, W. D. (Unilever Res., Sharnbrook/Bedford, UK). Immunology, 27(5), 841-53 (English) 1974. CODEN: IMMUA. ISSN: 0019-2805.

AB Intestinal immunoglobulins and antibodies in the local immune response to *E. coli* O somatic antigens was studied in young fistulated pigs. Antibody levels in intestinal secretion were raised for approx. 2-3 weeks following a single local antigenic challenge with a heat-killed aqueous suspension of *E. coli*. A 2nd challenge provoked a similar response suggesting a lack of immunol. memory. Antibody activity in the secretions was predominantly associated with IgA and immunofluorescent studies of biopsy specimens from these pigs indicated that intestinal synthesis and secretion of IgA had begun by the 10th day of life. Studies of piglets reared with the sow indicated that oral immunization with *E. coli* antigen after 10 days of age stimulated intestinal antibody secretion before weaning at 3 weeks. The response of gnotobiotic pigs to oral immunization and infection was evaluated by immunofluorescent histol. of the intestinal mucosa. Repeated oral administration of **heat-killed *E. coli*** gave an immunocyte response in the lamina propria numerically comparable with that produced by infection. The early response was dominated by cells of the IgM class whereas after 3 weeks IgA cells predominated. In the germ-free animal very few immunoglobulin-containing cells were detected. In vitro studies of antibacterial activity indicated that the most probable mechanism of immunol. control in the alimentary tract is bacteriostasis.

L15 ANSWER 8 OF 9 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

75027648 EMBASE Document No.: 1975027648. The effect of active immunisation on ascending pyelonephritis in the rat. Radford N.J.; Chick S.; Ling R.; et al.. KRUF Inst. Ren. Dis., Welsh Nat. Sch. Med., Roy. Infirm., Cardiff,

United Kingdom. J.PATH. Vol. 112, No. 3, pp. 169-175 1974.

CODEN: JPBAA7

Language: English.

AB In the rat, active immunization with **heat killed**

E. coli serotype 078 **vaccine** produced a high titer of IgM anti O antibody after 14 days. At this time, lower titers of IgG anti O antibodies were found in some of the animals. These antibodies did not prevent bacterial invasion of the kidney nor did they affect the incidence or severity of the renal scarring following ascending infection with **E. coli** serotype 078. Fourteen days after immunization with a formalin killed **vaccine** very high titers of IgM and IgG anti K antibodies were noted; these were in excess of 1 in 5120. It was shown that these antibodies reduced the severity but not the frequency of renal scarring following ascending **E. coli** infection.

L15 ANSWER 9 OF 9 MEDLINE on STN

71078403. PubMed ID: 4923787. [Oral immunization against coli enteritis with streptomycin-dependent **E. coli**. V. Different efficiency of live Sm- and **heat killed E. coli** 0111 B4 **vaccine** in settling of the homologous Sm-r strain in mice with antibiotic sterilized intestine]. Untersuchungen zur oralen Immunisierung gegen Coli-Enteritis mit Streptomycin-dependenden Coli-Keimen. V. Unterschiedliche Wirksamkeit von Impfstoffen aus lebenden Streptomycin-dependenden und hitzeabgetöteten EC-0111 B4-Bakterien auf die Hemmung der Ansiedlung des homologen Streptomycin-resistenten Stammes bei darmsterilen Mäusen. Lindek; Koch H. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. 1. Abt. Medizinisch-hygienische Bakteriologie, Virusforschung und Parasitologie. Originale, (1970) Vol. 215, No. 3, pp. 286-95. Journal code: 0337744. ISSN: 0372-8110. Pub. country: GERMANY, WEST: Germany, Federal Republic of. Language: German.

=> s l11 and allergen

L16 1 L11 AND ALLERGEN

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L16 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

2004:1121739 Document No. 142:278913 Sensitization and allergic response and intervention therapy in animal models. Helm, Ricki M.; Burks, A. Wesley (Department of Microbiology/Immunology, University of Arkansas for Medical Sciences/ACHRI/ACNC, Little Rock, AR, 72202-3591, USA). Journal of AOAC International, 87(6), 1441-1447 (English) 2004. CODEN: JAINEE. ISSN: 1060-3271. Publisher: AOAC International.

AB A review is presented of 3 murine models and a swine neonatal model used to investigate immunotherapeutic options. In Model 1, mutation of linear IgE-binding epitopes of Ara h 1 for the preparation of a hypoallergenic Ara h 1 is discussed with respect to expression in transgenic tobacco plants and correct folding following expression in the pET16b construct. In Model 2, the mutations of Ara h 1 were assessed for use as an immunotherapeutic agent. Although some protective benefit was observed with the modified Ara h 1 protein, animals desensitized with **heat-killed E. coli** preps. showed increased protection to challenge. In Model 3, soybean homologs to peanut proteins were investigated to determine if soybean immunotherapy can potentially provide benefit to peanut-allergic subjects. Although some protection was provided, addnl. experimentation with respect to optimal doses for sensitization and challenge will need to be investigated. In Model 4, the neonatal swine model was used to profile different foods (low to moderate to high sensitizing) similar to food allergies in humans. Evidence suggests such feasibility; however, threshold levels for sensitization and allergic responses will need addnl.

study. In summary, murine and swine animal models are being used to address immunotherapeutic avenues and investigation into the mechanisms of food-allergic sensitization.

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=> s recombinant modified allergen
L18 2 RECOMBINANT MODIFIED ALLERGEN

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L19 ANSWER 1 OF 1 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN DUPLICATE 1
2004135126 EMBASE [Hymenoptera venom allergy: Recent developments and perspectives in diagnosis and immunotherapy]. ALLERGIES AUX VENINS D'HYMENOPTERES: PERSPECTIVES DE PROGRES DANS LE DIAGNOSTIC ET LE TRAITEMENT D'HYPOSENSIBILISATION. Muller U.R.. U.R. Muller, Medizinische Klinik, Spital Bern Ziegler, Morillonstrasse 75-91, Bern CH-3006, Bern, Switzerland. ulrich.mueller@spitalbern.ch. Revue Francaise d'Allergologie et d'Immunologie Clinique Vol. 44, No. 3, pp. 281-285 2004.

Refs: 34.

ISSN: 0335-7457. CODEN: RFAIBB

S 0335-7457(04)00017-6. Pub. Country: France. Language: French. Summary

Language: English; French.

Entered STN: 20040412. Last Updated on STN: 20040412

AB There is a considerable potential to improve both diagnosis and immunotherapy in patients allergic to hymenoptera venoms. Among available diagnostic procedures, the basophil activation test appears interesting owing to its high specificity and sensitivity. This test is, however, expensive and without predictive value with regard to the protection induced by immunotherapy. Estimation of IL10 in lymphocyte cultures stimulated with the allergen may be more informative in this situation. An elevated basal serum tryptase level is a risk factor for particularly severe anaphylactic reactions and hence an indication for prolonged immunotherapy. Diagnostic tests with a cocktail of the major recombinant venom allergens have superior specificity compared to tests with the whole venom. **Recombinant modified allergens** or T cell epitope peptides no longer react with B cell epitopes of specific IgE while their reactivity with T cell epitopes is conserved. They will induce fewer side effects but they still be effective for immunotherapy. A reduction of side effects during the initial phase of immunotherapy can also be achieved by pre-medication with antihistamines. .COPYRG. 2003 Elsevier SAS. Tous droits reserves.

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L20 557 MODIFIED ALLERGEN

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L22 21 L20 AND PEANUT

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L23 ANSWER 1 OF 11 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on
STN

2006:1035827 The Genuine Article (R) Number: 094PN. Immunological mechanisms of allergen-specific immunotherapy. Larche M (Reprint); Akdis C A; Valenta R. McMaster Univ, Dept Med, Div Clin Immunol & Allergy, 1200 Main St W, Hamilton, ON L8N 3Z5, Canada (Reprint); McMaster Univ, Dept Med, Div Clin Immunol & Allergy, Hamilton, ON L8N 3Z5, Canada; Univ London Imperial Coll Sci Technol & Med, MRC & Asthma UK Ctr Allerg Mechanisms Asthma, Dept Allergy & Clin Immunol, Natl Heart & Lung Inst, Fac Med, London SW7 2AZ, England; Swiss Inst Allergy & Asthma Res, CH-7270 Davos, Switzerland; Med Univ Vienna, Div Immunopathol, Dept Pathophysiol, Ctr Physiol & Pathophysiol, A-1090 Vienna, Austria. m.larche@imperial.ac.uk. NATURE REVIEWS IMMUNOLOGY (OCT 2006) Vol. 6, No. 10, pp. 761-771. ISSN: 1474-1733. Publisher: NATURE PUBLISHING GROUP, MACMILLAN BUILDING, 4 CRINAN ST, LONDON N1 9XW, ENGLAND. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Allergen-specific immunotherapy has been carried out for almost a century and remains one of the few antigen-specific treatments for inflammatory diseases. The mechanisms by which allergen-specific immunotherapy exerts its effects include the modulation of both T-cell and B-cell responses to allergen. There is a strong rationale for improving the efficacy of allergen-specific immunotherapy by reducing the incidence and severity of adverse reactions mediated by IgE. Approaches to address this problem include the use of **modified allergens**, novel adjuvants and alternative routes of administration. This article reviews the development of allergen-specific immunotherapy, our current understanding of its mechanisms of action and its future prospects.

L23 ANSWER 2 OF 11 MEDLINE on STN DUPLICATE 1
2005530273. PubMed ID: 16189800. Allergenic characteristics of a modified **peanut** allergen. King Nina; Helm Ricki; Stanley J Steven; Vieths Stefan; Luttkopf Dirk; Hatahet Lina; Sampson Hugh; Pons Laurent; Burks Wesley; Bannon Gary A. (Department of Biochemistry & Molecular Biology, Arkansas Children's Research Institute, University of Arkansas for Medical Sciences, Little Rock, AR, USA.) Molecular nutrition & food research, (2005 Oct) Vol. 49, No. 10, pp. 963-71. Journal code: 101231818. ISSN: 1613-4125. Pub. country: Germany: Germany, Federal Republic of. Language: English.

AB Attempts to treat **peanut** allergy using traditional methods of allergen desensitization are accompanied by a high risk of anaphylaxis. The aim of this study was to determine if modifications to the IgE-binding epitopes of a major **peanut** allergen would result in a safer immunotherapeutic agent for the treatment of **peanut**-allergic patients. IgE-binding epitopes on the Ara h 2 allergen were modified, and modified Ara h 2 (mAra h 2) protein was produced. Wild-type (wAra h 2) and mAra h 2 proteins were analyzed for their ability to interact with T-cells, their ability to bind IgE, and their ability to release mediators from a passively sensitized RBL-2H3 cell line. Multiple T-cell epitopes were identified on the major **peanut** allergen, Ara h 2. Ara h 2 amino acid regions 11-35, 86-125, and 121-155 contained the majority of peptides that interact with T-cells from most patients. The wAra h 2 and mAra h 2 proteins stimulated proliferation of T-cells from **peanut**-allergic patients to similar levels. In contrast, the mAra h 2 protein exhibited greatly reduced IgE-binding capacity compared to the wild-type allergen. In addition, the **modified allergen** released

significantly lower amounts of beta-hexosaminidase, a marker for IgE-mediated RBL-2H3 degranulation, compared to the wild-type allergen.

L23 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2007 ACS on STN

2003:855391 Document No. 139:363577 Modified anaphylactic food allergens with reduced IgE-binding ability for decreasing clinical reaction to allergy. Caplan, Michael J.; Sosin, Howard B.; Sampson, Hugh; Bannon, Gary A.; Burks, A. Wesley; Cockrell, Gael; Compadre, Cesar M.; Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.; Maleki, Soheila J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (USA). U.S. Pat. Appl. Publ. US 2003202980 A1 20031030, 194 pp., Cont.-in-part of U.S. Ser. No. 494,096. (English). CODEN: USXXCO. APPLICATION: US 2002-100303 20020318. PRIORITY: US 1995-9455P 19951229; US 1996-717933 19960923; US 1998-73283P 19980131; US 1998-74633P 19980213; US 1998-74624P 19980213; US 1998-74590P 19980213; US 1998-106872 19980629; US 1998-141220 19980827; US 1998-191593 19981113; US 1999-241101 19990129; US 1999-240557 19990129; US 1999-248674 19990211; US 1999-248673 19990211; US 1999-122560P 19990302; US 1999-122565P 19990302; US 1999-122566P 19990302; US 1999-122450P 19990302; US 1999-122452P 19990302; US 1999-267719 19990311; US 2000-494096 20000128.

AB It has been determined that allergens, which are characterized by both humoral (IgE) and cellular (T-cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by altering as little as a single amino acid within the protein, preferably a hydrophobic residue towards the center of the IgE epitope, to eliminate IgE binding. Addnl. or alternatively a **modified allergen** with reduced IgE binding may be prepared by disrupting one or more of the disulfide bonds that are present in the natural allergen. The disulfide bonds may be disrupted chemical, e.g., by reduction and alkylation or by mutating one or

more

cysteine residues present in the primary amino acid sequence of the natural allergen. In certain embodiments, **modified allergens** are prepared by both altering one or more linear IgE epitopes and disrupting one or more disulfide bonds of the natural allergen. In certain embodiments, the methods of the present invention allow allergens to be modified while retaining the ability of the protein to activate T-cells, and, in some embodiments by not significantly altering or decreasing IgG binding capacity. The immunotherapeutics can be prepared in transgenic plants or animals; and administered in injection, aerosol, sublingual or topical form. The immunotherapeutics can also be encoded in gene for gene therapy and delivered by injecting into muscle or skin to induce tolerance. The Examples provided herein use **peanut** allergens to illustrate applications of the invention.

L23 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2

2003:906632 Correction of: 2002:736063 Document No. 139:349665 Correction of: 137:277814 Modified anaphylactic food allergens with reduced IgE-binding ability for decreasing clinical reaction to allergy. Caplan, Michael; Sosin, Howard; Sampson, Hugh; Bannon, Gary A.; Burks, Wesley A.; Cockrell, Gael; Compadre, Cesar M.; Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.; Maleki, Soheila J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (Panacea Pharmaceuticals, USA; et al.). PCT Int. Appl. WO 2002074250 A2 20020926, 299 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW; RW: AE, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US9108 20020318.

PRIORITY: US 2001-276822P 20010316.

AB It has been determined that allergens, which are characterized by both humoral (IgE) and cellular (T-cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by altering as little as a single amino acid within the protein, preferably a hydrophobic residue towards the center of the IgE epitope, to eliminate IgE binding. Addnl. or alternatively a **modified allergen** with reduced IgE binding may be prepared by disrupting one or more of the disulfide bonds that are present in the natural allergen. The disulfide bonds may be disrupted chemical, e.g., by reduction and alkylation or by mutating one or

more

cysteine residues present in the primary amino acid sequence of the natural allergen. In certain embodiments, **modified allergens** are prepared by both altering one or more linear IgE epitopes and disrupting one or more disulfide bonds of the natural allergen. In certain embodiments, the methods of the present invention allow allergens to be modified while retaining the ability of the protein to activate T-cells, and, in some embodiments by not significantly altering or decreasing IgG binding capacity. The Examples provided herein use **peanut** allergens to illustrate applications of the invention.

L23 ANSWER 5 OF 11 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

2003:28190 The Genuine Article (R) Number: 625KX. Clinical aspects of food allergy. Papageorgiou P S (Reprint). 58 Voutsina St, Holargos 15561, Greece (Reprint); Univ Athens, Sch Med, P&A Kyriakou Childrens Hosp, Allergy Unit, GR-11527 Athens, Greece. BIOCHEMICAL SOCIETY TRANSACTIONS (NOV 2002) Vol. 30, Part 6, pp. 901-906. ISSN: 0300-5127. Publisher: PORTLAND PRESS, 59 PORTLAND PLACE, LONDON W1N 3AJ, ENGLAND. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Food allergy affects 2.5 % of adults and 6-8 % of children, and is a leading cause of life-threatening anaphylactic episodes. Food allergy is defined as an adverse reaction to foods that is mediated immunologically and involves specific IgE or non-IgE mechanisms. In this review only IgE-related food allergy will be considered. Many food allergens are glycoproteins, but they do not share any striking biochemical similarities. The definition of many food proteins at the molecular level has tremendously facilitated our understanding of clinical syndromes and seemingly bizarre observations. Clinical manifestations of food allergy include symptoms of the gastrointestinal, cutaneous and respiratory systems, as well as systemic anaphylaxis. The diagnosis of food allergy involves a stepwise approach, including medical history taking, demonstration of specific IgE and confirmation by oral food challenge. The management of the food-allergic patient at present consists of avoidance of the culprit food and education, while future advances may include specific immunotherapy with **modified allergens** or DNA vaccination.

L23 ANSWER 6 OF 11 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN DUPLICATE 3

2002:301398 Document No.: PREV200200301398. Immunotherapy for **peanut** allergy using **modified allergens** and a bacterial adjuvant. Stanley, Joseph Steve [Reprint author]; Buzen, Fred [Reprint author]; Cockrell, Gael [Reprint author]; West, Mike [Reprint author]; Srivastava, Kamal D.; Li, X. M.; Sampson, Hugh A.; Burks, Wesley [Reprint author]; Bannon, Gary A. [Reprint author]. University of Arkansas, Little Rock, AR, USA. Journal of Allergy and Clinical Immunology, (January, 2002) Vol. 109, No. 1 Supplement, pp. S93. print. Meeting Info.: 58th Annual Meeting of the American Academy of Allergy,

Asthma and Immunology. New York, NY, USA. March 01-06, 2002. American Academy of Allergy, Asthma, and Immunology.
CODEN: JACIBY. ISSN: 0091-6749. Language: English.

L23 ANSWER 7 OF 11 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

2002:530650 The Genuine Article (R) Number: 563MD. Modification of **peanut** allergen Ara h 3: Effects on IgE binding and T cell stimulation. Rabjohn P; West C M; Connaughton C; Sampson H A; Helm R M (Reprint); Burks A W; Bannon G A. Univ Arkansas Med Sci, ACHRI, Dept Biochem & Mol Biol, Slot 512, 1120 Marshall St, Little Rock, AR 72202 USA (Reprint); Univ Arkansas Med Sci, ACHRI, Dept Biochem & Mol Biol, Little Rock, AR 72202 USA; Univ Arkansas Med Sci, ACHRI, Dept Pediat, Little Rock, AR 72202 USA; Mt Sinai Sch Med, Dept Pediat, New York, NY USA. INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY (MAY 2002) Vol. 128, No. 1, pp. 15-23. ISSN: 1018-2438. Publisher: KARGER, ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND. Language: English.
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Background: **Peanut** allergy is a major health concern due to the increased prevalence, potential severity, and chronicity of the reaction. The cDNA encoding a third **peanut** allergen, Ara h 3, has been previously cloned and characterized. Mutational analysis of the Ara h 3 IgE-binding epitopes with synthetic peptides revealed that single amino acid changes at critical residues could diminish IgE binding. Methods: Specific oligonucleotides were used in polymerase chain reactions to modify the cDNA encoding Ara h 3 at critical IgE binding sites. Four point mutations were introduced into the Ara h 3 cDNA at codons encoding critical amino acids in epitopes 1, 2, 3 and 4. Recombinant modified proteins were used in SDS-PAGE/Western IgE immunoblot, SDS-PAGE/Western IgE immunoblot inhibition and T cell proliferation assays to determine the effects of these changes on in vitro clinical indicators of **peanut** hypersensitivity. Results: Higher amounts of modified Ara h 3 were required to compete with the wild-type allergen for **peanut** -specific serum IgE. Immunoblot analysis with individual serum IgE from Ara-h-3-allergic patients showed that IgE binding to the modified protein decreased similar to 35-85% in comparison to IgE binding to wildtype Ara h 3. Also, the modified Ara h 3 retained the ability to stimulate T cell activation in PBMCs donated by Ara-h-3-allergic patients. Conclusions: The engineered hypoallergenic Ara h 3 variant displays two characteristics essential for recombinant allergen immunotherapy; it has a reduced binding capacity for serum IgE from **peanut**-hypersensitive patients and it can stimulate T-cell proliferation and activation. Copyright (C) 2002 S, Karger AG, Basel.

L23 ANSWER 8 OF 11 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN DUPLICATE 4

2001120857 EMBASE [**Peanut** allergy]. ALLERGIE A L'ARACHIDE. Dutau G.; Rance F. G. Dutau, Unite des maladies respiratoires, Hopital des Enfants, 330, avenue de Grande-Bretagne, 31026 Toulouse Cedex 3, France. Revue Francaise d'Allergologie et d'Immunologie Clinique Vol. 41, No. 2, pp. 187-198 2001.
Refs: 98.
ISSN: 0335-7457. CODEN: RFAIBB
Pub. Country: France. Language: French. Summary Language: English; French. Entered STN: 20010412. Last Updated on STN: 20010412

AB **Peanut** allergy, which is frequent in the United States and was much less so in Europe up to the mid-eighties, has become a major problem in many industrialized countries. **Peanut** consumption is high in Eastern Europe, the United Kingdom, The Netherlands, Germany and France. The frequency of **peanut** allergy is between 0.5 and 0.7% in the general population. Two million Americans are now thought to be affected. In France **peanuts** are one of the most frequent allergens, lying

second (27.4 %) to egg in food allergies in children, and holding first place in food allergies in children aged over 3 years. Sensitization occurs through ingestion, contact even if indirect, and inhalation. The symptoms, which affect the skin and the respiratory or gastrointestinal tract, appear a few minutes to a few hours after exposure. Serious reactions (anaphylactic shock, life-threatening reactions, sudden death) have been described. Asthma has a significantly higher association with **peanut** allergy than with other allergies, taken overall. As with other food allergies, diagnosis is based on history, prick-tests, screening for specific serum IgE and food challenge whose modalities (labial and oral challenge) are debated. For the time being, elimination is the only form of treatment. The development of a **modified allergen** as immunogenic as possible but practically without allergenic effects should give immunotherapy new impetus. Patients with severe **peanut** allergy should carry a card or wear a distinctive bracelet indicating their condition as well as an emergency kit including in particular epinephrine. .COPYRGT. 2001 Editions scientifiques et medicales Elsevier SAS.

- L23 ANSWER 9 OF 11 MEDLINE on STN DUPLICATE 5
 2001262411. PubMed ID: 11306930. Engineering, characterization and in vitro efficacy of the major **peanut** allergens for use in immunotherapy. Bannon G A; Cockrell G; Connaughton C; West C M; Helm R; Stanley J S; King N; Rabjohn P; Sampson H A; Burks A W. (Department of Biochemistry and Molecular Biology, Arkansas Children's Hospital Research Institute, Little Rock 72205, USA.. bannongarya@exchnage.uams.edu). International archives of allergy and immunology, (2001 Jan-Mar) Vol. 124, No. 1-3, pp. 70-2. Journal code: 9211652. ISSN: 1018-2438. Pub. country: Switzerland. Language: English.
- AB BACKGROUND: Numerous strategies have been proposed for the treatment of **peanut** allergies, but despite the steady advancement in our understanding of atopic immune responses and the increasing number of deaths each year from **peanut** anaphylaxis, there is still no safe, effective, specific therapy for the **peanut**-sensitive individual. Immunotherapy would be safer and more effective if the allergens could be altered to reduce their ability to initiate an allergic reaction without altering their ability to desensitize the allergic patient. METHODS: The cDNA clones for three major **peanut** allergens, Ara h 1, Ara h 2, and Ara h 3, have been cloned and characterized. The IgE-binding epitopes of each of these allergens have been determined and amino acids critical to each epitope identified. Site-directed mutagenesis of the allergen cDNA clones, followed by recombinant production of the **modified allergen**, provided the reagents necessary to test our hypothesis that hypoallergenic proteins are effective immunotherapeutic reagents for treating **peanut**-sensitive patients. Modified **peanut** allergens were subjected to immunoblot analysis using **peanut**-positive patient sera IgE, T cell proliferation assays, and tested in a murine model of **peanut** anaphylaxis. RESULTS: In general, the **modified allergens** were poor competitors for binding of **peanut**-specific IgE when compared to their wild-type counterpart. The **modified allergens** demonstrated a greatly reduced IgE-binding capacity when individual patient serum IgE was compared to the binding capacity of the wild-type allergens. In addition, while there was considerable variability between patients, the **modified allergens** retained the ability to stimulate T cell proliferation. CONCLUSIONS: These **modified allergen** genes and proteins should provide a safe immunotherapeutic agent for the treatment of **peanut** allergy.
 Copyright 2001 S. Karger AG, Basel

1999:495393 Document No. 131:143513 Methods and reagents for decreasing allergic reactions. Sosin, Howard; Bannon, Gary A.; Burks, A. Wesley, Jr.; Sampson, Hugh A. (University of Arkansas, USA; Mt. Sinai School of Medicine, University of New York). PCT Int. Appl. WO 9938978 A1 19990805, 46 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US2031 19990129. PRIORITY: US 1998-PV73283 19980131; US 1998-PV74590 19980213; US 1998-PV74624 19980213; US 1998-PV74633 19980213; US 1998-141220 19980827.

AB It has been determined that allergens, which are characterized by both humoral (IgE) and cellular (T cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by masking the site with a compound that prevents IgE binding or by altering as little as a single amino acid within the protein, most typically a hydrophobic residue towards the center of the IgE-binding epitope, to eliminate IgE binding. The method allows the protein to be altered as minimally as possible, other than within the IgE-binding sites, while retaining the ability of the protein to activate T cells, and, in some embodiments by not significantly altering or decreasing IgG binding capacity. The examples use **peanut** allergens to demonstrate alteration of IgE binding sites. The critical amino acids within each of the IgE binding epitopes of the **peanut** protein that are important to Ig binding have been determined. Substitution of even a single amino acid within each of the epitopes led to loss of IgE binding. Although the epitopes shared no common amino acid sequence motif, the hydrophobic residues located in the center of the epitope appeared to be most critical to IgE binding.

L23 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2007 ACS on STN
1983:556476 Document No. 99:156476 Some immunochemical studies of native and **modified allergens**. King, Te Piao; Giallongo, Agata (Rockefeller Univ., New York, NY, 10021, USA). Skandia International Symposia, Volume Date 1982, 15th(Theor. Clin. Aspects Allerg. Dis.), 215-36 (English) 1983. CODEN: SISYDD. ISSN: 0346-9069.

AB Studies were performed to induce significant suppression of specific IgE with very low doses of a highly immunogenic material (modified antigens). Two allergen-lectin conjugates were prepared; ragweed antigen E was conjugated with either **peanut** agglutinin or wheat germ agglutinin. These **modified allergens** were not more effective than the native allergen in suppressing specific IgE production

=> s 120 and milk
L25 4 L20 AND MILK

=> dup remove 125
PROCESSING COMPLETED FOR L25
L26 3 DUP REMOVE L25 (1 DUPLICATE REMOVED)

=> d 126 1-3 cbib abs

L26 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
2003:855391 Document No. 139:363577 Modified anaphylactic food allergens with reduced IgE-binding ability for decreasing clinical reaction to allergy. Caplan, Michael J.; Sosin, Howard B.; Sampson, Hugh; Bannon, Gary A.; Burks, A. Wesley; Cockrell, Gael; Compadre, Cesar M.; Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.;

Maleki, Soheila J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (USA). U.S. Pat. Appl. Publ. US 2003202980 A1 20031030, 194 pp., Cont.-in-part of U.S. Ser. No. 494,096. (English). CODEN: USXXCO. APPLICATION: US 2002-100303 20020318. PRIORITY: US 1995-9455P 19951229; US 1996-717933 19960923; US 1998-73283P 19980131; US 1998-74633P 19980213; US 1998-74624P 19980213; US 1998-74590P 19980213; US 1998-106872 19980629; US 1998-141220 19980827; US 1998-191593 19981113; US 1999-241101 19990129; US 1999-240557 19990129; US 1999-248674 19990211; US 1999-248673 19990211; US 1999-122560P 19990302; US 1999-122565P 19990302; US 1999-122566P 19990302; US 1999-122450P 19990302; US 1999-122452P 19990302; US 1999-267719 19990311; US 2000-494096 20000128.

AB It has been determined that allergens, which are characterized by both humoral (IgE) and cellular (T-cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by altering as little as a single amino acid within the protein, preferably a hydrophobic residue towards the center of the IgE epitope, to eliminate IgE binding. Addnl. or alternatively a **modified allergen** with reduced IgE binding may be prepared by disrupting one or more of the disulfide bonds that are present in the natural allergen. The disulfide bonds may be disrupted chemical, e.g., by reduction and alkylation or by mutating one or

more cysteine residues present in the primary amino acid sequence of the natural allergen. In certain embodiments, **modified allergens** are prepared by both altering one or more linear IgE epitopes and disrupting one or more disulfide bonds of the natural allergen. In certain embodiments, the methods of the present invention allow allergens to be modified while retaining the ability of the protein to activate T-cells, and, in some embodiments by not significantly altering or decreasing IgG binding capacity. The immunotherapeutics can be prepared in transgenic plants or animals; and administered in injection, aerosol, sublingual or topical form. The immunotherapeutics can also be encoded in gene for gene therapy and delivered by injecting into muscle or skin to induce tolerance. The Examples provided herein use peanut allergens to illustrate applications of the invention.

L26 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1
2003:906632 Correction of: 2002:736063 Document No. 139:349665 Correction of: 137:277814 Modified anaphylactic food allergens with reduced IgE-binding ability for decreasing clinical reaction to allergy. Caplan, Michael; Sosin, Howard; Sampson, Hugh; Bannon, Gary A.; Burks, Wesley A.; Cockrell, Gael; Compadre, Cesar M.; Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.; Maleki, Soheila J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (Panacea Pharmaceuticals, USA; et al.). PCT Int. Appl. WO 2002074250 A2 20020926, 299 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW; RW: AE, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US9108 20020318. PRIORITY: US 2001-276822P 20010316.

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L26 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
1999:495393 Document No. 131:143513 Methods and reagents for decreasing allergic reactions. Sosin, Howard; Bannon, Gary A.; Burks, A. Wesley, Jr.; Sampson, Hugh A. (University of Arkansas, USA; Mt. Sinai School of Medicine, University of New York). PCT Int. Appl. WO 9938978 A1 19990805, 46 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US2031 19990129. PRIORITY: US 1998-PV73283 19980131; US 1998-PV74590 19980213; US 1998-PV74624 19980213; US 1998-PV74633 19980213; US 1998-141220 19980827.

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=> s 120 and egg

L27 8 L20 AND EGG

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PROCESSING COMPLETED FOR L27

L28 6 DUP REMOVE L27 (2 DUPLICATES REMOVED)

=> d 128 1-6 cbib abs

L28 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

2003:855391 Document No. 139:363577 Modified anaphylactic food allergens with reduced IgE-binding ability for decreasing clinical reaction to allergy. Caplan, Michael J.; Sosin, Howard B.; Sampson, Hugh; Bannon, Gary A.; Burks, A. Wesley; Cockrell, Gael; Compadre, Cesar M.;

Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.; Maleki, Soheila J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (USA). U.S. Pat. Appl. Publ. US 2003202980 A1 20031030, 194 pp., Cont.-in-part of U.S. Ser. No. 494,096. (English). CODEN: USXXCO. APPLICATION: US 2002-100303 20020318. PRIORITY: US 1995-9455P 19951229; US 1996-717933 19960923; US 1998-73283P 19980131; US 1998-74633P 19980213; US 1998-74624P 19980213; US 1998-74590P 19980213; US 1998-106872 19980629; US 1998-141220 19980827; US 1998-191593 19981113; US 1999-241101 19990129; US 1999-240557 19990129; US 1999-248674 19990211; US 1999-248673 19990211; US 1999-122560P 19990302; US 1999-122565P 19990302; US 1999-122566P 19990302; US 1999-122450P 19990302; US 1999-122452P 19990302; US 1999-267719 19990311; US 2000-494096 20000128.

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L28 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1
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L28 ANSWER 3 OF 6 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN DUPLICATE 2
2001120857 EMBASE [Peanut allergy]. ALLERGIE A L'ARACHIDE. Dutau G.; Rance F. G. Dutau, Unite des maladies respiratoires, Hopital des Enfants, 330, avenue de Grande-Bretagne, 31026 Toulouse Cedex 3, France. Revue Francaise d'Allergologie et d'Immunologie Clinique Vol. 41, No. 2, pp. 187-198 2001.

Refs: 98.

ISSN: 0335-7457. CODEN: RFAIBB

Pub. Country: France. Language: French. Summary Language: English; French.

Entered STN: 20010412. Last Updated on STN: 20010412

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L28 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
1999:495393 Document No. 131:143513 Methods and reagents for decreasing allergic reactions. Sosin, Howard; Bannon, Gary A.; Burks, A. Wesley, Jr.; Sampson, Hugh A. (University of Arkansas, USA; Mt. Sinai School of Medicine, University of New York). PCT Int. Appl. WO 9938978 A1 19990805, 46 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2.

APPLICATION: WO 1999-US2031 19990129. PRIORITY: US 1998-PV73283 19980131;
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L28 ANSWER 5 OF 6 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

1998:146495 The Genuine Article (R) Number: YY214. Tolerogenic activity of polyethylene glycol-conjugated lysozyme distinct from that of the native counterpart. Ito H O (Reprint); So T; Hirata M; Koga T; Ueda T; Imoto T. Kyushu Univ, Fac Dent, Dept Biochem, Fukuoka 81282, Japan (Reprint); Kyushu Univ, Grad Sch Pharmaceut Sci, Fukuoka 81282, Japan. IMMUNOLOGY (FEB 1998) Vol. 93, No. 2, pp. 200-207. ISSN: 0019-2805. Publisher: BLACKWELL SCIENCE LTD, P O BOX 88, OSNEY MEAD, OXFORD OX2 ONE, OXON, ENGLAND. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Conjugation of proteins with polyethylene glycol (PEG) has been reported to make the proteins tolerogenic. Native proteins are also potentially tolerogenic when given without adjuvants. We compared immunotolerogenic activities between PEG-conjugated and native hen egg-white lysozyme (HEL). BALB/c mice were given consecutive weekly intraperitoneal administrations of PEG-conjugated HEL, unmodified HEL or phosphate-buffered saline (PBS), for 3 weeks, then challenged with HEL in Freund's complete adjuvant. The pretreatment with PEG-HEL tolerized both T-cell and humoral responses, while native HEL tolerized only the T-cell response. Immunoglobulin G1 (IgG1) antibody was already elevated in HEL-pretreated mice prior to challenge immunization, followed by suppressed IgG2a and IgG2b, but spared IgG1 production after the antigen challenge, whereas PEG-HEL-pretreated mice produced no antibody in all IgG subclasses prior and subsequent to the antigen-challenge. Production of interleukin-2 (IL-2) and interferon-gamma (IFN-gamma) by lymphoid cells in response to HEL in vitro was markedly suppressed in both the antigen-pretreated groups, while suppression of IL-4 production was evident only in PEG-HEL-, not in HEL-pretreated animals. Involvement of suppressor cells in these tolerance states was found to be unlikely, and the immunological property of PEG-HEL differed from deaggregated HEL that was similar to the original HEL. These results suggest a unique immunotolerogenic activity of PEG-conjugated proteins to suppress both T-helper type-1 (Th1) and Th2-type responses, the result bring extensive inhibition of all IgG subclass responses, while tolerance induction by unconjugated soluble proteins tends to be targeted on Th1-, but spares Th2-type responses.

L28 ANSWER 6 OF 6 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

1996:258810 The Genuine Article (R) Number: UC578. Reduced immunogenicity of monomethoxypolyethylene glycol-modified lysozyme for activation of T cells . So T (Reprint); Ito H O; Koga T; Ueda T; Imoto T. KYUSHU UNIV, GRAD SCH PHARMACEUT SCI, FUKUOKA 81282, JAPAN; KYUSHU UNIV, SCH DENT, DEPT BIOCHEM, FUKUOKA 81282, JAPAN. IMMUNOLOGY LETTERS (JAN 1996) Vol. 49, No. 1-2, pp. 91-97. ISSN: 0165-2478. Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Chemical modification of proteins with monomethoxypolyethylene glycol (mPEG) will reduce the immunogenicity of proteins. In the present study, we evaluated the effect of mPEG modification on the capacity of hen egg-white lysozyme (HEL) to stimulate T cells. Lymph node cells (LNCs) from mice immunized with HEL or with mPEG-HEL conjugate were cultured with these antigens, then we measured the proliferation and IL-2 production. mPEG-modification lowered the T cell-activating capacity of HEL, both in vitro and in vivo. Neither toxicity, nor antigen non-specific immunosuppressive capacity was observed with mPEG-HEL and unconjugated mPEG. Suppressor cells were unlikely to be generated in the mPEG-HEL-primed LNCs. We next examined the behavior of mPEG-HEL during antigen processing. The capacity of HEL and mPEG-HEL to be incorporated by live cells was much the same. However, the susceptibility to various proteases, including endosomal/lysosomal enzymes, was significantly decreased by mPEG modification. The increased resistance of mPEG-HEL to proteolytic degradation implied that the conjugate was poorly presented to T cells, This may be an important factor related to the low immunogenicity of mPEG modified proteins.

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L29 5 L20 AND SHRIMP

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PROCESSING COMPLETED FOR L29
L30 1 DUP REMOVE L29 (4 DUPLICATES REMOVED)

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L30 ANSWER 1 OF 1 MEDLINE on SIN DUPLICATE 1
2000290936. PubMed ID: 10828721. Modulation of allergen-specific immune responses to the major **shrimp** allergen, tropomyosin, by specific targeting to scavenger receptors on macrophages. Rajagopal D; Ganesh K A; Subba Rao P V. (Department of Biochemistry, Indian Institute of Science, Bangalore, India.) International archives of allergy and immunology, (2000 Apr) Vol. 121, No. 4, pp. 308-16. Journal code: 9211652. ISSN: 1018-2438. Pub. country: Switzerland. Language: English.

AB BACKGROUND: Tropomyosin from **shrimp** is the major cross-reacting crustacean food allergen. Earlier studies have led to the purification and immunochemical characterization of the major IgE binding epitopes of the allergen. Maleylated proteins are known to be specifically targeted to scavenger receptors on macrophage. Since antigens processed and presented by macrophages are known to elicit Th1 type of responses and allergic responses are characterized by polarization towards Th2 phenotype, the possibility of modulation of allergen-specific immune responses by targeting of tropomyosin to macrophage via scavenger receptor was explored. METHODS: The IgG and IgE binding potential of the native maleylated form of tropomyosin was carried out by ELISA and immunoblot. The ability of the native and maleylated form of allergen to induce in vitro proliferation of splenocytes from BALB/C mice immunized with both forms of allergen was tested. The in vitro production of IL-4 and IFN-gamma by splenocytes from mice immunized with the two forms of allergen was determined from culture supernatants. The in vivo production of serum IgG1 and IgG2a antibodies following immunization with native and

modified allergens was monitored by ELISA. RESULTS: The maleylated form of tropomyosin was found to have reduced antigenicity and allergenicity as compared to its native counterpart. The **modified allergen** was, however, found to elicit a cellular response similar to native tropomyosin in vitro. Analysis of the cytokine profiles showed a modulation from an IL-4-dominant, proallergic, Th2 phenotype to an IFN-gamma-dominant, antiallergic, Th1 phenotype that could also be correlated to a modulation in the in vivo antibody isotype. CONCLUSION: The results suggest the possible potential for modulating allergic responses in vivo by selective targeting to macrophages.
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L1      8476 S RECOMBINANT ESCHERICHIA COLI
L2      0 S L1 AND HEAT-KILLED
L3      0 S L1 AND MODIFIED ALLERGEN
L4      1162694 S ESCHERICHIA COLI
L5      462 S L4 AND RECOMBINANT ALLERGEN
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L7      0 S L6 AND HEAT-KILLED
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L9      387782 S E COLI
L10     0 S L9 AND MODIFIED ALLERGEN
L11     3911 S L9 AND KILLED
L12     1 S L11 AND ALLERGEN
L13     230 S HEAT-KILLED E COLI
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L15     9 DUP REMOVE L14 (6 DUPLICATES REMOVED)
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L17     0 S L11 AND PET16
L18     2 S RECOMBINANT MODIFIED ALLERGEN
L19     1 DUP REMOVE L18 (1 DUPLICATE REMOVED)
L20     557 S MODIFIED ALLERGEN
L21     0 S L20 AND PEAUNT
L22     21 S L20 AND PEANUT
L23     11 DUP REMOVE L22 (10 DUPLICATES REMOVED)
L24     0 S L23 AND E COLI
L25     4 S L20 AND MILK
L26     3 DUP REMOVE L25 (1 DUPLICATE REMOVED)
L27     8 S L20 AND EGG
L28     6 DUP REMOVE L27 (2 DUPLICATES REMOVED)
L29     5 S L20 AND SHRIMP
L30     1 DUP REMOVE L29 (4 DUPLICATES REMOVED)

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L31      0 L13 AND INCLUSION BODY

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L32      1 L13 AND ALLERGEN

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L32 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

2004:1121739 Document No. 142:278913 Sensitization and allergic response and intervention therapy in animal models. Helm, Ricki M.; Burks, A. Wesley (Department of Microbiology/Immunology, University of Arkansas for Medical

Sciences/ACHRI/ACNC, Little Rock, AR, 72202-3591, USA). Journal of AOAC International, 87(6), 1441-1447 (English) 2004. CODEN: JAINEE. ISSN: 1060-3271. Publisher: AOAC International.

- AB A review is presented of 3 murine models and a swine neonatal model used to investigate immunotherapeutic options. In Model 1, mutation of linear IgE-binding epitopes of Ara h 1 for the preparation of a hypoallergenic Ara h 1 is discussed with respect to expression in transgenic tobacco plants and correct folding following expression in the pET16b construct. In Model 2, the mutations of Ara h 1 were assessed for use as an immunotherapeutic agent. Although some protective benefit was observed with the modified Ara h 1 protein, animals desensitized with **heat-killed E. coli** preps. showed increased protection to challenge. In Model 3, soybean homologs to peanut proteins were investigated to determine if soybean immunotherapy can potentially provide benefit to peanut-allergic subjects. Although some protection was provided, addnl. experimentation with respect to optimal doses for sensitization and challenge will need to be investigated. In Model 4, the neonatal swine model was used to profile different foods (low to moderate to high sensitizing) similar to food allergies in humans. Evidence suggests such feasibility; however, threshold levels for sensitization and allergic responses will need addnl. study. In summary, murine and swine animal models are being used to address immunotherapeutic avenues and investigation into the mechanisms of food-allergic sensitization.

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L33 42 L11 AND FORMALDEHYDE

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L34 0 L33 AND ALLERGEN

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L35 19 DUP REMOVE L33 (23 DUPLICATES REMOVED)

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L35 ANSWER 1 OF 19 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

2006390023 EMBASE Detection of Escherichia coli O157:H7 using chicken immunoglobulin Y. Sunwoo H.H.; Wang W.W.; Sim J.S.. H.H. Sunwoo, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB T6G 2P5, Canada. hsunwoo@ualberta.ca. Immunology Letters Vol. 106, No. 2, pp. 191-193 15 Aug 2006.

Refs: 8.

ISSN: 0165-2478. CODEN: IMLED6

S 0165-2478(06)00132-5. Pub. Country: Netherlands. Language: English.

Summary Language: English.

Entered STN: 20060831. Last Updated on STN: 20060831

- AB A sandwich ELISA technique was examined to detect Escherichia coli O157:H7 using chicken anti-**E. coli** O157:H7 IgY as the capture-antibody and an anti-**E. coli** O157 mouse mAb conjugated with biotin as the detection antibody. The anti-**E. coli** O157:H7 IgY was harvested from eggs laid by hens (23 weeks of age, Single Comb White Leghorn) immunized with formalin-killed **E. coli** O157:H7. The IgY was purified by water dilution methods and gel chromatography on Sephacryl S-300 followed by ammonium sulfate precipitation. The sensitivity (CFU/ml) of sandwich ELISA for the **E. coli** O157:H7 was repeatedly examined with 10 replicates of each sample and a standard curve was plotted. The sandwich ELISA can detect as low as 40 CFU/ml of **E. coli** O157:H7. The data suggest that chicken IgY-based sandwich ELISA provides

a reliable, inexpensive and sensitive assay for the detection of the food-borne pathogen *E. coli* O157:H7. .COPYRGT. 2006 Elsevier B.V. All rights reserved.

- L35 ANSWER 2 OF 19 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
- 2001304745 EMBASE Evaluation of in vitro antibacterial activity of some disinfectants on *Escherichia coli* serotypes. El-Naggar M.Y.M.; Akeila M.A.; Turk H.A.; El-Ebady A.A.; Sahaly M.Z.. Dr. M.Y.M. El-Naggar, Botany/Microbiology Department, Faculty of Science, Alexandria University, Alexandria, Egypt. Moustafa64@yahoo.com. Journal of General and Applied Microbiology Vol. 47, No. 2, pp. 63-73 2001.
Refs: 33.
ISSN: 0022-1260. CODEN: JGAMA
Pub. Country: Japan. Language: English. Summary Language: English.
Entered STN: 20010913. Last Updated on STN: 20010913
- AB Three disinfectants commonly used in poultry farms (formalin, TH4+, and Virkon-S) were chosen for the present study. The effect of disinfectant concentration and the duration of exposure to these disinfectants on the survival of *Escherichia coli* serotypes (O114:K-, O86, O55:K39, and O86:K60) were investigated. Formalin (0.6%), TH4+ (0.06%), and Virkon (0.5%) all killed the four serotypes within 5 min of exposure. As the disinfectant concentration decreases, the length of exposure time to kill serotype increases. At 0.03%, 0.007%, and 0.03% of formalin, TH4+ and Virkon-S concentrations failed to kill the four *E. coli* serotypes within 360 min, respectively. An improvement of the inhibitory effect of these disinfectants occurred when added together with the inoculum instead of an established population. The influence of formalin, TH4+, and Virkon-S on the cell morphology of *E. coli* O55:K39 was investigated by using transmission electron microscopy. Formalin-treated cells exhibited normal cell morphology, with the exception that the treated cell was less fimbriated, and more destruction of pili increased when formalin concentrations were doubled. Cells treated with TH4+ (0.03%) showed destruction of the cell wall and cell surface membrane after 5 min. Cell filamentation occurred at 0.015% and increased with the increase of exposure time to this drug. Spheroplasts were observed only when cells were treated with 0.125% Virkon-S for 60 min, and cell lysis started to occur when 0.25% Virkon-S was applied for 15 min. Scanning electron microscope study revealed that Virkon-S at 0.03% and TH4+ at 0.007% completely prevented the adherence of *E. coli* O55:K39 serotype to chicken tracheal organ, whereas formalin (0.03%) disinfection minimized the adherence of *E. coli* cells to tracheal explants after 360 min of incubation.
- L35 ANSWER 3 OF 19 MEDLINE on STN DUPLICATE 1
2000137497. PubMed ID: 10675032. Identification and cloning of an aspartyl proteinase from *Coccidioides immitis*. Johnson S M; Kerekes K M; Zimmermann C R; Williams R H; Pappagianis D. (Department of Medical Microbiology and Immunology, School of Medicine, University of California, Davis 95616, USA.. smjohnson@ucdavis.edu) . Gene, (2000 Jan 11) Vol. 241, No. 2, pp. 213-22. Journal code: 7706761. ISSN: 0378-1119. Pub. country: Netherlands. Language: English.
- AB A 45 kDa protein was isolated from a soluble vaccine prepared from formaldehyde-killed spherules of *Coccidioides immitis*. From the N-terminal amino acid sequence, the protein yielded a 17-amino-acid peptide that was homologous to sequences of other fungal aspartyl proteinases. The coccidioidal cDNA encoding the proteinase was amplified using oligonucleotide primers designed from the 45 kDa N-terminal amino acid sequence and a fungal aspartyl proteinase consensus amino acid sequence. The PCR product was cloned and sequenced, and the remaining 5' upstream and 3' downstream cDNA was amplified, cloned, and sequenced. The cDNA encoding the coccidioidal aspartyl proteinase open

reading frame was cloned and the fusion protein containing a C-terminal His-tag expressed in *E. coli*. The recombinant aspartyl proteinase was purified by immobilized metal affinity chromatography. This recombinant protein will be used for further studies to evaluate its antigenicity, including protective immunogenicity.

L35 ANSWER 4 OF 19 MEDLINE on STN DUPLICATE 2
1998311328. PubMed ID: 9648994. *Escherichia coli* and *Proteus mirabilis* inhibit the perinuclear but not the circulating antineutrophil cytoplasmic antibody reaction. Yang P; Danielsson D; Järnerot G. (Dept. of Medicine, Örebro Medical Centre Hospital, Sweden.) *Scandinavian journal of gastroenterology*, (1998 May) Vol. 33, No. 5, pp. 529-34. Journal code: 0060105. ISSN: 0036-5521. Pub. country: Norway. Language: English.

AB BACKGROUND: Perinuclear antineutrophil cytoplasmic antibodies (P-ANCA) are found in 48%-83% of serum samples from patients with ulcerative colitis (UC). Their pathogenic role and initiating stimuli are unknown. In contrast to patients with vasculitides and ANCA reactivities, the antibodies in UC patients do not react with myeloperoxidase (MPO) or proteinase 3 (PR3). The aim of the present study was to investigate whether bacterial species of the intestinal tract and other sources could interfere with P-ANCA in sera from patients with UC. METHODS: Seventeen P-ANCA-positive and anti-MPO-negative serum samples from patients with UC were tested with *Escherichia coli* 014 and *Staphylococcus aureus* Wood 46. Six of these serum samples with different P-ANCA titres were selected to test further the influence of 15 different gram-negative or gram-positive bacterial strains. Six anti-MPO positive P-ANCA, 5 anti-PR3 positive C-ANCA, and 10 antinuclear antibody (ANA)-positive serum samples were used as controls. The antineutrophil cytoplasmic antibodies (ANCAs) were analysed by an indirect immunofluorescence method (IIF) on ethanol-fixed neutrophils, and the ANAs were tested by IIF on HEP-2 cells or rat liver tissues. The bacteria used in the experiments were either live or killed by formalin or glutaraldehyde fixation or heated at 80 degrees C for 30 min. The test was first performed as a bacterial absorption test with sedimented organisms and then at various temperatures with the supernatant from suspension of live bacteria. RESULTS: Both MPO-positive and MPO-negative P-ANCA reactivity was abolished by absorption of patient sera with live *E. coli* and *Proteus mirabilis* but not with bacteria representing members of 10 other species, suggesting that antibody reactivity was absorbed away. However, continued experiments indicated that the inhibition of P-ANCA was not due to classic antigen-antibody interactions but rather to decomposition of the antigenic substrate of the neutrophils by factors present in the supernatants of live *E. coli* and *P. mirabilis*. The activity of the supernatant was temperature-dependent, with strong activity at room temperature and 37 degrees C, no activity at 0 degrees C, and abolished by mild heat treatment (56 degrees or 60 degrees C). No activity was shown in the supernatants from bacteria treated with formaldehyde or glutaraldehyde. CONCLUSIONS: Soluble material from live *E. coli* and *P. mirabilis* has the capacity to decompose the antigenic substrate of neutrophils responsible for both MPO-positive and MPO-negative P-ANCA, most probably brought about through enzymatic activity. Anti PR3-positive C-ANCA were not affected, which suggests substrate specificity of the proposed enzymatic activity.

L35 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
1998:303526 Document No. 129:107734 Endotoxin-effects of vaccination with *Escherichia coli* vaccines in the pig. Garcia, P.; Hakt, H.; Magnusson, U.; Kindahl, H. (Department of Obstetrics and Gynaecology and Clinical Chemistry, Swedish University of Agricultural Sciences, Uppsala, Swed.). *Acta Veterinaria Scandinavica*, 39(1), 135-140 (English) 1998. CODEN: AVSCA7. ISSN: 0044-605X. Publisher: Acta Veterinaria Scandinavica.

AB The purpose of this study was to evaluate blood chemical and clin. response

of castrated young boars to com. available vaccines to **E. coli** where the bacteria have been **formaldehyde killed** and the endotoxins have not been removed. The animals that received the vaccine strictly s.c. did not show any clin. or blood biochem. changes as compared to a pig, which received the same dose i.v. Under clin. field circumstances the vaccinations are performed s.c./i.m. and the uptake from the injection site can vary. However, there is a risk of the vaccine coming directly into the circulation through small blood vessels. Since the boars received the same dose of the vaccines as recommended for pregnant gilts or sows in late pregnancy, the findings were discussed in terms of the risks that might be seen in pregnancy.

L35 ANSWER 6 OF 19 MEDLINE on STN
 1998420426. PubMed ID: 9749978. Balance of proinflammatory and antiinflammatory cytokines in mice immunized with *Escherichia coli* and correlation with mortality after lethal challenge. Raponi G; Ghezzi M C; Lun M T; Mancini C. (I Chair of Clinical Microbiology, Faculty of Medicine, La Sapienza University of Rome, Italy.) Medical microbiology and immunology, (1998 Jun) Vol. 187, No. 1, pp. 11-16. Journal code: 0314524. ISSN: 0300-8584. Pub. country: GERMANY: Germany, Federal Republic of. Language: English.

AB The balance of proinflammatory and antiinflammatory cytokines, their correlation with endotoxin levels and mortality rate after lethal challenge of *Escherichia coli* was investigated in mice immunized weekly for 8 weeks with formalin-killed **E. coli** either untreated or treated with 0.5x minimal inhibitory concentration of aztreonam. Control mice treated in parallel with saline, died within 24 h after challenge with 100x lethal dose (LD50) of viable **E. coli** 06:K-. Mice immunized with antibiotic-treated bacteria showed a significantly higher survival than mice immunized with untreated **E. coli**. Cytokines were not detected in the sera of control mice during the entire period of immunization. At 90 min after immunization, mice immunized with antibiotic-treated **E. coli** showed tumor necrosis factor-alpha (TNF-alpha) levels significantly lower and interleukin (IL)-6 levels significantly higher ($P < 0.05$) than mice immunized with untreated **E. coli**, while comparable levels of interferon-gamma (IFN-gamma) were measured in both groups. TNF-alpha and IL-10 levels measured 90 min after lethal challenge correlated with the mortality rate observed in each group ($r = 0.96$ for TNF-alpha and 0.94 for IL-10). IL-6 levels correlated with survival ($r = 0.95$), while IFN-gamma serum levels did not differ in the two immunized groups, but were significantly higher than those measured in the control mice. IL-4 was detected only after challenge of mice immunized with antibiotic-treated bacteria. Comparable levels of circulating endotoxin were measured after lethal challenge in both control and immunized mice. These data showed that in the presence of a protective immune response the survival of immunized mice was correlated with an early alteration of cytokine expression pattern including enhanced secretion of IL-4, IL-6 and IFN-gamma, and reduced secretion of TNF-alpha and IL-10.

L35 ANSWER 7 OF 19 MEDLINE on STN DUPLICATE 3
 97316536. PubMed ID: 9172447. A 5-h screening and 24-h confirmation procedure for detecting *Escherichia coli* O157:H7 in beef using direct epifluorescent microscopy and immunomagnetic separation. Restaino L; Frampton E W; Irbe R M; Allison D R. (R & F Laboratories, West Chicago, IL 60185, USA.) Letters in applied microbiology, (1997 May) Vol. 24, No. 5, pp. 401-4. Journal code: 8510094. ISSN: 0266-8254. Pub. country: ENGLAND: United Kingdom. Language: English.

AB An antibody-direct epifluorescent filter technique (Ab-DEFT) detected 100% of the raw ground beef samples inoculated with *Escherichia coli* O157:H7 cells (0.15 cells g⁻¹) and incubated in a prewarmed, modified buffered

peptone water (mBPW) non-selective enrichment broth for 5 h at 42 degrees C in an orbital shaking water bath (200 rev min⁻¹). Over 50% of the microscopic fields viewed were positive (1-10 fluorescent cells field⁻¹) in the Ab-DEFT. All positive screening results were confirmed within 24 h by subjecting 1 ml of the mBPW to the Dynabeads anti-**E. coli** 0157 immunomagnetic separation procedure, followed by plating on MacConkey sorbitol agar containing 5-bromo-4-chloro-3-indolyl-beta-D-glucuronide. At this cell concentration, 41.7% of the inoculated samples were detected by the conventional method involving a 24-h selective enrichment. Exposure to viable cells before filtration was minimized by using a 0.58% formaldehyde concentration for 5 min at 50 degrees C (**killed** > 4.00 logs of **E. coli** 0157:H7 cells) without affecting cell fluorescence.

L35 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

1996:307731 Document No. 124:340906 Method for immunization of poultry with vaccines. Takeda, Reiji; Ekino, Shigeo; Sugimori, Giichi; Nakamura, Takashi; Aoyama, Shigemasa (Shionogi Seiyaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 08073377 A2 19960319 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-169717 19950705. PRIORITY: JP 1994-153342 19940705.

AB A method for immunization of poultry with vaccines against e.g. *Escherichia coli* type O2 or *Brucella abortus* for infection prevention involves: administration of the vaccine (**killed E. coli** type O2 or *B. abortus*) to the excretory tract of fetuses during hatching. E.g. **E. coli** type O2 vaccine is prepared by cultivation of **E. coli** type O2 in BHI medium at 37° for 24 h, treatment of cultured **E. coli** type O2 with 0.2% formaldehyde at room temperature for 48 h, suspension of the treated **E. coli** type O2 in 0.2% saline to final concentration of 1.5 X 10¹⁰ CFU/mL, and finally sonication.

L35 ANSWER 9 OF 19 MEDLINE on STN

DUPLICATE 4

95105015. PubMed ID: 7806373. Role of endotoxin in acute inflammation induced by gram-negative bacteria: specific inhibition of lipopolysaccharide-mediated responses with an amino-terminal fragment of bactericidal/permeability-increasing protein. Kohn F R; Kung A H. (XOMA Corporation, Berkeley, California 94710.) Infection and immunity, (1995 Jan) Vol. 63, No. 1, pp. 333-9. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB A recombinant 23-kDa amino-terminal fragment of human bactericidal/permeability-increasing protein (rBP123), a potent lipopolysaccharide (LPS)-binding/neutralizing protein, was used as a probe to assess the role of endotoxin in the acute inflammatory responses elicited by gram-negative bacteria in rat subcutaneous air pouches. In initial experiments, rBP123 prevented the *Escherichia coli* 0111:B4 LPS-induced accumulation of polymorphonuclear leukocytes (PMN), tumor necrosis factor alpha (TNF-alpha), and nitrite (a stable end product of nitric oxide formation) in exudate fluids. Significant inhibition of TNF-alpha production was still evident when rBP123 treatment was delayed for 30 min after LPS instillation. In subsequent experiments, rBP123 also prevented the nitrite and early (2-h) TNF-alpha accumulation induced by three different strains of formaldehyde-killed gram-negative bacteria (**E. coli** 07:K1, **E. coli** 0111:B4, and *Pseudomonas aeruginosa* 12.4.4) but did not inhibit the PMN or late (6-h) TNF-alpha accumulation induced by these bacteria. As with LPS challenge, a significant inhibition of early TNF-alpha production was still evident when rBP123 treatment was delayed for 30 to 60 min after instillation of **killed** bacteria. The results indicate that in this experimental model the NO and early TNF-alpha responses to gram-negative bacterial challenge are mediated predominantly by endotoxin, whereas the PMN and late TNF-alpha responses may be mediated by other bacterial components. Moreover, the results

indicate that rBP123 can inhibit the bacterially induced production of certain potentially harmful mediators (TNF-alpha and NO) without entirely blocking the host defense, i.e., PMN response, against the bacteria.

L35 ANSWER 10 OF 19 MEDLINE on STN

96072457. PubMed ID: 8568283. In vivo chemoactivation of oyster hemocytes induced by bacterial secretion products. Alvarez M R; Friedl F E; Roman F R. (Department of Biology, University of South Florida, Tampa 33620-5150, USA.) Journal of invertebrate pathology, (1995 Nov) Vol. 66, No. 3, pp. 287-92. Journal code: 0014067. ISSN: 0022-2011. Pub. country: United States. Language: English.

AB Movements of tissue hemocytes in the Eastern oyster *Crassostrea virginica* were monitored and quantified by image analysis of sections following inoculation with agar cores containing *Escherichia coli* or cell-free medium on which the bacteria had previously grown. Hemocytes respond to the presence of live bacteria by accumulating in widely dispersed areas of tissue surrounding the gut and digestive diverticula. The response is rapid and evident within 40 min, is maximal at 1 hr, and declines by 3 hr after inoculation. Sterile implanted agar cores do not produce a response. Bacteria killed with ozone elicit a response when inoculated together with the medium on which they had grown while bacteria killed by heat or formalin do not. Killed bacteria suspended in saline fail to stimulate hemocyte chemokinesis. Cell-free medium applied externally produces a response equal to that measured with live bacteria inoculated internally. Extraction of bacteria-free medium with hexane does not significantly reduce hemocyte chemokinesis. Digestion of bacteria-free medium with pronase completely eliminates chemokinesis. Molecular filtrates of bacteria-free medium induce maximal chemokinetic response at molecular weight as low as 1 kDa. These data show that the oyster hemocyte activators produced by *E. coli* are most likely low-molecular-weight polypeptides which diffuse from the site of inoculation and can pass through the intact external surface epithelium to induce a chemokinetic response.

L35 ANSWER 11 OF 19 MEDLINE on STN

95282476. PubMed ID: 7762266. Vaccination with a formalin-killed P-fimbriated *E. coli* whole-cell vaccine prevents renal scarring from pyelonephritis in the non-human primate. Roberts J A; Kaack M B; Baskin G; Svenson S B. (Department of Urology, Tulane University School of Medicine, New Orleans, LA 70112, USA.) Vaccine, (1995 Jan) Vol. 13, No. 1, pp. 11-6. Journal code: 8406899. ISSN: 0264-410X. Pub. country: ENGLAND: United Kingdom. Language: English.

AB A formalin-killed P-fimbriated *Escherichia coli* serotype O4 vaccine was evaluated for protective efficacy in monkeys in an experimental pyelonephritis model following urethral bacterial inoculation. The vaccination did not protect against initial colonization and there were no significant differences in the time of bacteriuria after experimental infection in the two groups of animals. The whole-cell vaccine offers a limited protection against renal dysfunction and scarring (p = 0.002) and less renal involvement (p = 0.04), results that are quite similar to those given by a synthetic O-antigen-specific saccharide-protein conjugate vaccine previously tested.

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92219624 EMBASE Document No.: 1992219624. Oral vaccination of weaned rabbits against enteropathogenic *Escherichia coli*-like *E. coli* O103 infection: Use of heterologous strains harboring lipopolysaccharide or adhesin of pathogenic strains. Milon A.; Esslinger J.; Camguilhem R.. Departement de Biologie Moleculaire, Un. Associee Microbiol. Moleculaire, INRA, 23, Chemin des Capelles, F-31076 Toulouse Cedex, France. Infection and Immunity Vol. 60, No. 7, pp. 2702-2709 1992.

ISSN: 0019-9567. CODEN: INFIBR

Pub. Country: United States. Language: English. Summary Language: English.
Entered STN: 920816. Last Updated on STN: 920816

- AB To test the importance of lipopolysaccharide (LPS) and adhesin as major antigens in vaccination against rabbit enteropathogenic *Escherichia coli* (EPEC)-like *E. coli* O103 infection, we used two nonpathogenic wild-type strains to immunize rabbits at weaning. One of these strains (C127) harbors the O103 LPS but does not express the 32,000-molecular-weight adhesin that characterizes the highly pathogenic O103 strains. The other (C6) belongs to the O128 serogroup, which does not cross-react with the O103 serogroup, but expresses the adhesin. These strains were administered orally, either live or after Formalin inactivation. After vaccination, the animals were challenged with highly pathogenic O103 strain B10. Compared with rabbits vaccinated with the Formalin-killed homologous strain, rabbits vaccinated with killed C127 or C6 showed partial but significant protection. When given live, these strains colonized more or less heavily the digestive tract of the animals and provided nearly complete (C127) or complete (C6) protection against challenge. They induced a quick local immune response, as judged by fecal immunoglobulin A anti-LPS kinetics. Furthermore, strain C6 induced an ecological effect of 'resistance to colonization' against challenge strain B10. This effect may have been due to the adhesin that is shared by both strains and to the production of a colicin. Strain C6 could inhibit in vitro the growth of highly pathogenic O103 strains. On the whole, our results show that adhesins and LPS are important, although probably not exclusive, protection-inducing components in rabbit EPEC-like colibacillosis and provide insight into possible protection of rabbits against EPEC-like *E. coli* infection with live strains.

- L35 ANSWER 13 OF 19 MEDLINE on STN DUPLICATE 5
92189657. PubMed ID: 1799394. [Immunomodulating effect of killed , apathogenic *Escherichia coli*, strain Nissle 1917, on the macrophage system]. Immunomodulierende Wirkung von abgetoteten apathogenen *Escherichia coli*, Stamm Nissle 1917, auf das Makrophagensystem. Hockertz S. (Fraunhofer Institut für Toxikologie, Abteilung Immunbiologie/Immunotoxikologie, Hannover.) Arzneimittelforschung, (1991 Oct) Vol. 41, No. 10, pp. 1108-12. Journal code: 0372660. ISSN: 0004-4172. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.

- AB The influence of formaldehyde-killed *Escherichia coli* strain Nissle 1917 (SK 22) on macrophages of C57BL/6 mice was investigated in vitro. It has been shown that SK 22 activated macrophages derived from bone marrow produced Interleukin-6 with high efficiency. In addition, SK 22 stimulated macrophages to secrete tumor necrosis factor, as measured by a bioassay. Furthermore, macrophages were activated by SK 22 to produce a 3 fold amount of oxygen radicals compared to the spontaneous oxygen radical production. In contrast to this finding, the phagocytic capacity of these macrophages was only slightly increased. The specific lysis of P 815 tumor cells by peritoneal macrophages after coinoculation with SK 22 was measured using tumor cells prelabelled with radioactive ⁵¹Cr. The results of the in vitro experiments presented clearly show that the *E. coli* preparation SK 22 is an efficient immunomodulator of the unspecific immune system.

- L35 ANSWER 14 OF 19 MEDLINE on STN
8505122. PubMed ID: 6501409. *Legionella pneumophila* inhibits acidification of its phagosome in human monocytes. Horwitz M A; Maxfield F R. The Journal of cell biology, (1984 Dec) Vol. 99, No. 6, pp. 1936-43. Journal code: 0375356. ISSN: 0021-9525. Pub. country: United States. Language: English.

- AB We used quantitative fluorescence microscopy to measure the pH of

phagosomes in human monocytes that contain virulent *Legionella pneumophila*, a bacterial pathogen that multiplies intracellularly in these phagocytes. The mean pH of phagosomes that contain live *L. pneumophila* was 6.1 in 14 experiments. In the same experiments, the mean pH of phagosomes containing dead *L. pneumophila* averaged 0.8 pH units lower than the mean pH of phagosomes containing live *L. pneumophila*, a difference that was highly significant (P less than 0.01 in all 14 experiments). In contrast, the mean pH of phagosomes initially containing live *E. coli*, which were then **killed** by monocytes, was the same as for phagosomes initially containing dead *E. coli*. The mean pH of *L. pneumophila* phagosomes in activated monocytes, which inhibit *L. pneumophila* intracellular multiplication, was the same as in nonactivated monocytes. To simultaneously measure the pH of different phagosomes within the same monocyte, we digitized and analyzed fluorescence images of monocytes that contained both live *L. pneumophila* and sheep erythrocytes. Within the same monocyte, live *L. pneumophila* phagosomes had a pH of approximately 6.1 and sheep erythrocyte phagosomes had a pH of approximately 5.0 or below. This study demonstrates that *L. pneumophila* is capable of modifying the pH of its phagocytic vacuole. This capability may be critical to the intracellular survival and multiplication of this and other intracellular pathogens.

L35 ANSWER 15 OF 19 MEDLINE on STN DUPLICATE 6
84238363. PubMed ID: 6376357. In vitro cytotoxic effect of alpha-hemolytic *Escherichia coli* on human blood granulocytes. Gadeberg O V; Orskov I. Infection and immunity, (1984 Jul) Vol. 45, No. 1, pp. 255-60. Journal code: 0246127. ISSN: 0019-9567. Pub. country: United States. Language: English.

AB The cytotoxic effect of *Escherichia coli* bacteria on human blood granulocytes was measured by recording numbers of nonlysed cells and percentages of viable cells after in vitro incubation with bacteria in the presence of plasma. A total of 179 strains from various sources of infection were tested. Of 117 alpha-hemolytic strains, 59 were cytotoxic. Five nonhemolytic mutant strains, derived from alpha-hemolytic cytotoxic strains, were nontoxic. None of the 62 nonhemolytic strains were toxic. Four spontaneously occurring alpha-hemolytic, nontoxic mutant strains were isolated from cytotoxic ones. Cytotoxicity of bacteria reached a maximum after log-phase growth at 30 to 37 degrees C for 2.5 h, and the toxic capacity was equal after growth in various media, including human urine and plasma. The cytotoxic effect increased with the length of exposure of granulocytes to bacteria and with increasing numbers of bacteria per granulocyte. Cytotoxic strains showed different degrees of toxicity, highly cytotoxic strains lysing about 90% of the granulocytes and killing about one-half of nonlysed cells in 1 h. Bacteria **killed** by heat, **formaldehyde**, or UV light were nontoxic. Alpha-hemolytic strains of O groups 2, 4, 6, 25, and 75 originating from various infections in humans were more frequently cytotoxic than alpha-hemolytic strains of other O groups derived from human infections. Culture supernatants containing free alpha-hemolysin were highly cytotoxic to human blood granulocytes, monocytes, and lymphocytes in vitro, whether supernatants originated from cytotoxic or noncytotoxic bacteria. Cytotoxicity to phagocytes, which is mediated by or closely linked genetically to alpha-hemolysin, may be a mechanism by which alpha-hemolytic strains of *E. coli* strengthen their ability to establish and maintain infections.

L35 ANSWER 16 OF 19 MEDLINE on STN DUPLICATE 7
83056932. PubMed ID: 6815187. The role of phospholipase A2 lysines in phospholipolysis of *Escherichia coli* **killed** by a membrane-active neutrophil protein. Forst S; Weiss J; Elsbach P. The Journal of biological chemistry, (1982 Dec 10) Vol. 257, No. 23, pp. 14055-7. Journal code: 2985121R. ISSN: 0021-9258. Pub. country: United States. Language: English.

- AB Purified rabbit bactericidal/permeability-increasing protein at bactericidal concentrations is a membrane-perturbing agent that triggers hydrolysis of envelope phospholipids of a phospholipase A-less *Escherichia coli* (S17) mutant by a highly basic (pI greater than 10) phospholipase A2, purified from *Agkistrodon halys blomhoffii* snake venom. Most other purified phospholipases A2 do not degrade the phospholipids of **E. coli killed** by the bactericidal protein. To study the role of enzyme charge in bactericidal protein-dependent phospholipid hydrolysis, lysines of the *Agkistrodon* phospholipase A2 were modified, either by carbamylation (decreases net charge), or by reductive methylation (no delta charge). Incorporation of [14C]cyanate or [14C] **formaldehyde** and amino acid analysis served to monitor modification. Modification appears to be limited to epsilon-NH2 groups. Incorporation of up to 5 mol of cyanate or **formaldehyde**/mol of enzyme did not affect catalytic activity. In contrast, incorporation of, on average, 1 mol of either reagent/mol of protein reduced by 80% the activity of the enzyme toward **E. coli S17 killed** by the bactericidal protein. Since this loss is similar with carbamylation and reductive methylation, the role of the epsilon-NH2 group in the bactericidal protein-dependent hydrolysis seems independent of charge. Thus, the lysines in this phospholipase A2 are not essential for catalysis and substrate binding, but are essential for the action of this enzyme on **E. coli killed** by the bactericidal protein.
- L35 ANSWER 17 OF 19 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
1982:147297 Document No.: PREV198273007281; BA73:7281. LEAKAGE INDUCED IN *ESCHERICHIA-COLI* CELLS BY A PROTEIN RNA COMPLEXES FROM BACTERIO PHAGE F-2. DE MARS CODY J [Reprint author]; CONWAY T W. DEP BIOCHEM, UNIV IOWA, IOWA CITY, IOWA 52242, USA. *Journal of Virology*, (1981) Vol. 39, No. 1, pp. 60-66.
CODEN: JOVIAM. ISSN: 0022-538X. Language: ENGLISH.
- AB Complexes of f2 phage RNA and its A protein, or maturation protein, transfect **E. coli** cells much better than protein-free RNA. These complexes were used to introduce the bacteriophage f2 lysis gene into cells. The A protein-RNA complex **killed** cells, probably by causing them to leak large macromolecules. Previously induced β -galactosidase leaked from cells treated either with the A protein-RNA complex or with lethal but noninfectious complexes that had been treated with **formaldehyde**. This observation was consistent with an earlier finding that **formaldehyde**-treated f2 RNA stimulates the in vitro synthesis of a lysis protein. The complexes did not stimulate the rate of leakage of β -galactosidase from a streptomycin-resistant mutant known to be lysis defective. The rate of leakage was increased in a double mutant resistant to both streptomycin and rifampin and which is lysed normally by f2 bacteriophage.
- L35 ANSWER 18 OF 19 MEDLINE on STN
81152810. PubMed ID: 7010560. Protective effect of immunization with *Salmonella minnesota* Re 595 against ascending *Escherichia coli* O6K13H1 pyelonephritis in rats. Larsson P; Kaijser B; Baltzer I M; Olling S. *Scandinavian journal of infectious diseases. Supplementum*, (1980) Vol. Suppl 24, pp. 220-3. Journal code: 0251025. ISSN: 0300-8878. Pub. country: Sweden. Language: English.
- AB Active as well as passive immunization with formalin-killed **S. minnesota** Re 595 bacteria protected against experimental, ascending pyelonephritis caused by **E. coli** O6K13H1 in rats. Absorption of the hyperimmune sera with Re antigen before passively given did not eliminate the protective effect. The specificity of protective antibodies is discussed.

L35 ANSWER 19 OF 19 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

1978:127944 Document No.: PREV197865014944; BA65:14944. EFFECT OF HEAT ON ANTIGENICITY AND IMMUNOGENICITY OF THE ANTIGENIC DETERMINANT SHARED BY HAEMOPHILUS-INFLUENZAE TYPE B AND ESCHERICHIA-COLI K-100. WHANG H Y [Reprint author]; GOLDHAR J; NETER E. LAB BACTERIOL, CHILD HOSP, BUFFALO, NY 14222, USA. Infection and Immunity, (1977) Vol. 18, No. 1, pp. 68-72. CODEN: INFIBR. ISSN: 0019-9567. Language: ENGLISH.

AB **E. coli** K100 produces an antigenic determinant similar to or identical with the capsular antigen of *H. influenzae* type b. The effects of heat on the immunogenicity, erythrocyte-modifying capacity and antigenicity of this cross-reacting antigen (CRA) were studied. Immunization of rabbits with viable or **formaldehyde-killed** suspensions of **E. coli** K100, producing CRA, engendered CRA antibodies in significant titers, as demonstrated by hemagglutination of erythrocytes modified by *H. influenzae* type b antigen. Heating of the suspensions for 1 h at 56 or 100° C destroyed the immunogenicity of CRA, and the heated suspensions did not prime for a secondary antibody response. Supernatants of heated suspensions also were non-immunogenic. Repeated freezing and thawing of heated suspensions of **E. coli** K100 or their supernatants did not restore immunogenicity. Heat also abolished the immunogenicity of *H. influenzae* type b. Loss of immunogenicity of CRA of **E. coli** K100 by heat was not due to alteration of the antigenic determinant, since heated suspensions and supernatants thereof modified erythrocytes for agglutination by *H. influenzae* type b antiserum. The latter supernatants also inhibited hemagglutination by *H. influenzae* type b antibodies and absorbed the latter. Striking differences exist in the effects of heat on CRA compared to enterobacterial common antigen and lipopolysaccharide O antigen of enteric bacteria. Heating of the latter 2 antigens does not abolish their priming effect, and repeated freezing and thawing restores their immunogenicity.

=> s l11 and bleach

L36 1 L11 AND BLEACH

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L36 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

2002:222954 Document No.: PREV200200222954. Lactic acid bacteria protect leaves from infection by environmental microbes. Gomez, L. [Reprint author]; Cheng, A.; Watkins, C.; Dahlen, C.; Vermeulen, C. W. Division Ave High School, Levittown, NY, USA. Abstracts of the General Meeting of the American Society for Microbiology, (2001) Vol. 101, pp. 508. print. Meeting Info.: 101st General Meeting of the American Society for Microbiology. Orlando, FL, USA. May 20-24, 2001. American Society of Microbiology. ISSN: 1060-2011. Language: English.

AB That tender, moist mesophyll cells remain uninfected although exposed to external microbes via a leaf's stomata prompted us to think that plants may be using the same protective strategy that mammalian portal membranes use - a coating of bacteria of that division of "lactics" called the dairy bacteria. Leaves and dairy bacteria have long been associated (silage), but what these few species of slow-growing fastidious bacteria are doing in plants has not been asked. Whole leaf squashes of surface-sterilized (**bleach**) leaves were made onto paper-covered replication blocks, and then printed onto various agars resulting in abundant growth of mixed populations. Numerous streptococci and lactobacilli were identified microscopically from colonies of different morphologies. Choosing a "universal" plant - the dandelion - we found that the bacterial subpopulations were species specific over a 150 mile range. Testing

whether these bacteria merely filled a niche, or they actively protected the leaf was done both in situ and in vitro. Blue dye mixes of **E. coli** and **B. subtilis** were injected horizontally into the mesophyll of several leaves, and at timed intervals, the leaves were cracked open at the blue injection lines, and swabbings were plated on MacConky agar, or briefly boiled and plated on nutrient agar. Within 60 minutes, both bacteria were **killed**. An in vitro mixed culture of "leaf bacteria" in nutrient broth was also inoculated with low numbers of **E. coli** and **B. subtilis**. (Filtrates were not lethal to the "contaminants.") Again within an hour both became undetectable. Thus, not only are "lactics" copiously present INSIDE leaves, but they also have the capacity, presumably via bacteriocins, to kill other microbes common in the environment. Implications: (1) evolution - two kingdoms using the same protection strategy; and (2) agriculture - development of lactics with more potent bacteriocins.

=> s l11 and ozone
L37 32 L11 AND OZONE

=> dup remove l37
PROCESSING COMPLETED FOR L37
L38 15 DUP REMOVE L37 (17 DUPLICATES REMOVED)

=> d l38 1-15 cbib abs

L38 ANSWER 1 OF 15 MEDLINE on STN DUPLICATE 1
2006248007. PubMed ID: 16672466. Inactivation of enterohemorrhagic *Escherichia coli* in rumen content- or feces-contaminated drinking water for cattle. Zhao Tong; Zhao Ping; West Joe W; Bernard John K; Cross Heath G; Doyle Michael P. (Center for Food Safety, University of Georgia, Griffin, GA 30223, USA.) Applied and environmental microbiology, (2006 May) Vol. 72, No. 5, pp. 3268-73. Journal code: 7605801. ISSN: 0099-2240. Pub. country: United States. Language: English.

AB Cattle drinking water is a source of on-farm *Escherichia coli* O157:H7 transmission. The antimicrobial activities of disinfectants to control **E. coli** O157:H7 in on-farm drinking water are frequently neutralized by the presence of rumen content and manure that generally contaminate the drinking water. Different chemical treatments, including lactic acid, acidic calcium sulfate, chlorine, chlorine dioxide, hydrogen peroxide, caprylic acid, **ozone**, butyric acid, sodium benzoate, and competing **E. coli**, were tested individually or in combination for inactivation of **E. coli** O157:H7 in the presence of rumen content. Chlorine (5 ppm), **ozone** (22 to 24 ppm at 5 degrees C), and competing **E. coli** treatment of water had minimal effects (<1 log CFU/ml reduction) on killing **E. coli** O157:H7 in the presence of rumen content at water-to-rumen content ratios of 50:1 (vol/wt) and lower. Four chemical-treatment combinations, including (i) 0.1% lactic acid, 0.9% acidic calcium sulfate, and 0.05% caprylic acid (treatment A); (ii) 0.1% lactic acid, 0.9% acidic calcium sulfate, and 0.1% sodium benzoate (treatment B); (iii) 0.1% lactic acid, 0.9% acidic calcium sulfate, and 0.5% butyric acid (treatment C); and (iv) 0.1% lactic acid, 0.9% acidic calcium sulfate, and 100 ppm chlorine dioxide (treatment D); were highly effective (>3 log CFU/ml reduction) at 21 degrees C in killing **E. coli** O157:H7, O26:H11, and O111:NM in water heavily contaminated with rumen content (10:1 water/rumen content ratio [vol/wt]) or feces (20:1 water/feces ratio [vol/wt]). Among them, treatments A, B, and C **killed** >5 log CFU **E. coli** O157:H7, O26:H11, and O111:NM/ml within 30 min in water containing rumen content or feces, whereas treatment D inactivated approximately 3 to 4 log CFU/ml under the same conditions. Cattle given water containing treatment A or C

or untreated water (control) ad libitum for two 7-day periods drank 15.2, 13.8, and 30.3 liters/day, respectively, and cattle given water containing 0.1% lactic acid plus 0.9% acidic calcium sulfate (pH 2.1) drank 18.6 liters/day. The amounts of water consumed for all water treatments were significantly different from that for the control, but there were no significant differences among the water treatments. Such treatments may best be applied periodically to drinking water troughs and then flushed, rather than being added continuously, to avoid reduced water consumption by cattle.

L38 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

2006:1302956 Experimental observation on bactericidal efficacy of OM-500 **ozone** air disinfectant. Luo, Jun; Long, Bei-guo; Long, Min; Lai, Jian-ping; Zhang, Wen-bing (Department of Microbiology, School of Public Health and Tropic Medicine, Southern Medical University, Guangzhou, 510515, Peop. Rep. China). Xiandai Yufang Yixue, 33(10), 1954-1955 (Chinese) 2006. CODEN: XYIIFS. ISSN: 1003-8507. Publisher: Xiandai Yufang Yixue Zazhishe.

AB Objective: To study the air disinfection effect of Om-500 **ozone** air disinfectant using two methods. Methods: When carrier quant. test was used, we found that 94.41% of *Staphylococcus aureus* and 100% of *E. coli* was **killed** if Om-500 **ozone** air disinfectant for 60 min, and 97.3% of *E. coli* was **killed** if operated for 5 min. When simulate locale air disinfection test was used, the result shows that decrease rate of nature bacterium in air can reach to 90.88% and 95.74% resp. Conclusion: The experiment suggested that it has a good air disinfection effect.

L38 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

2006:462613 Document No. 145:425652 Development of a supersonic levitation washer-disinfectant using **ozone** micro-bubbling and silver electrolysis. Ueda, Toyotoshi; Hara, Masanori; Nishiyama, Kyohei; Ando, Satoru; Shimizu, Mitsuhiro; Shigihara, Takanori; Koshiba, Mamiko; Nakamura, Shun (Department of Chemistry, Faculty of Science and Engineering, Meisei University, 2-1-1, Hodokubo, Hino-shi, Tokyo, 191-8506, Japan). Bokin Bobai, 34(4), 201-209 (Japanese) 2006. CODEN: BOBODP. ISSN: 0385-5201. Publisher: Nippon Bokin Bobai Gakkai.

AB A new type of supersonic washer-disinfectant using **ozone** micro-bubbling and silver electrolysis was developed in order to clean and disinfect many devices and materials such as semiconductors, endoscopes and cut vegetables. This washer has fourteen supersonic oscillators of an umbrella shape, which emit supersonic traveling waves along more than two directions and are driven independently by each supersonic transducer. This supersonic levitation washer can evenly clean not only hard materials such as glasses, jewels and metals, but also soft materials such as clothes, plastics, rubbers and bodies. Neither detergent nor disinfectant is necessary: therefore, its drainage does not cause environmental pollution. Disinfection is easy and rapid using **ozone** oxidation and silver electrolysis. **Ozone** is produced by the irradiation of UV light to the atmospheric oxygen and jets as micro-bubbles. Electrolysis is carried out using a d.c. between the pos. electrode of a net-shaped silver plate and the neg. electrode of a stainless-steel container. *E. coli* (103-106 cells/mL) was **killed** within 20 min either by **ozone** or silver electrolysis. *Bacillus atrophaeus* (104 cells/mL) was **killed** in 30 min by **ozone** and in 5 min by silver electrolysis. *S. cerevisiae* (104 cells/mL) was **killed** in 1 min by silver electrolysis. This apparatus meets the new demand for cleaning with the conservation of the global environment in mind.

L38 ANSWER 4 OF 15 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

2004:983208 The Genuine Article (R) Number: 865BN. Electrochemical wastewater

disinfection: Identification of its principal germicidal actions. Li X Y (Reprint); Diaio H F; Fan F X J; Gu J D; Ding F; Tong A S F. Univ Hong Kong, Dept Civil Engrn, Pokfulam Rd, Hong Kong, Hong Kong, Peoples R China (Reprint); Univ Hong Kong, Dept Civil Engrn, Hong Kong, Hong Kong, Peoples R China; Tsing Hua Univ, Dept Environm Sci & Engrn, Beijing, Peoples R China; Macao Water Supply Co Ltd, SAAM, Macau, Peoples R China; Univ Hong Kong, Dept Ecol & Biodivers, Hong Kong, Hong Kong, Peoples R China; Hong Kong SAR Govt, Environm Protect Dept, Hong Kong, Hong Kong, Peoples R China. xlia@hkucc.hku.hk. JOURNAL OF ENVIRONMENTAL ENGINEERING-ASCE (OCT 2004) Vol. 130, No. 10, pp. 1217-1221. ISSN: 0733-9372. Publisher: ASCE-AMER SOC CIVIL ENGINEERS, 1801 ALEXANDER BELL DR, RESTON, VA 20191-4400 USA. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

- AB Laboratory experiments were carried out to investigate the mechanisms of electrochemical (EC) wastewater disinfection. Artificial wastewater contaminated by *Escherichia coli* (*E. coli*) culture, and which contained different salts of NaCl, Na₂SO₄, and NaNO₃, was used as the test medium. The experimental results do not favor the hypotheses that the EC bactericidal action was due to cell destruction by the electric field and the production of persulfate. In comparison to direct chlorination, the EC process displayed a much stronger disinfecting capability than that of electrochlorination assumed for EC disinfection. Observations with scanning electron microscopy on the *E. coli* bacteria of wastewater treated by different means of disinfection suggested that the cells were likely **killed** during the EC treatment by chemical products with oxidizing and germicidal powers similar to that of **ozone** and much stronger than that of chlorine. All of the findings support the theory that the major killing function of EC disinfection is provided by short-lived and high-energy intermediate EC products, such as free radicals.

- L38 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2007 ACS ON STN
2004:598356 Document No. 142:193766 Comparison of examination of germicidal efficacy of **ozone** water by two test methods. Jiang, Li; Wang, Taixing; Rao, Lin (Institute of Microbiology and Epidemiology, Academy of Military Medical Sciences, Beijing, 100071, Peop. Rep. China). Zhongguo Xiaoduxue Zazhi, 20(1), 11-13 (Chinese) 2003. CODEN: ZXZAFO. ISSN: 1001-7658. Publisher: Zhongguo Xiaoduxue Zazhi Bianjibu.

- AB Suspension quant. germicidal test method and quant. germicidal test method using carriers immersed in running liquid disinfectant for examining efficacy of **ozone** water in killing *Escherichia coli* were compared and the influence of peptone on its germicidal efficacy was examined. The results indicated that when suspension quant. germicidal test method was used, in absence of peptone, the **ozone** water containing **ozone** 8.0 mg/L with a 1 min contact time **killed** 100% of *E. coli* in average and if peptone 10 g/L was present, the same **ozone** water with a 10 min contact time **killed** 65.96% of *E. coli* in average. When quant. germicidal test method using carriers immersed in running liquid disinfectant was used, the **ozone** water containing **ozone** 8.0 mg/L with a 10 min contact time **killed** 99.97% of *E. coli* in average and if the bacterial suspension contained higher than 25% volume of calf serum, the germicidal efficacy was influenced significantly. The results suggest that when running **ozone** water is used in surface disinfection, examination of germicidal efficacy by quant. germicidal test method using carriers immersed in running liquid disinfectant relatively approximates the real condition.

- L38 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2007 ACS ON STN
2002:964231 Document No. 138:44757 Medical devices treatment with **ozone** for prevention of infection. Darouiche, Rabih O.; Shannon, David C. (Baylor College of Medicine, USA). PCT Int. Appl. WO 2002100455

A2 20021219, 30 pp. DESIGNATED STATES: W: AU, CA, JP; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US17806 20020605. PRIORITY: US 2001-296837P 20010608.

AB Indwelling medical devices resistant to microbial colonization and other complications include devices having a coating on 1 or more surfaces comprising an effective amount or concentration of an oxygen-releasing substance, such as **ozone**, and optionally, other therapeutic agents. Devices may alternately include a sleeve or other means which allows one or more surfaces of the device to be flushed or insufflated periodically with **ozone** or another oxygen-releasing substance. A clin. isolate of *Escherichia coli* strain 2131 that had caused catheter-related infection was used. In the exptl. arm, **ozone** was bubbled into the bacterial suspension. In the control arm, no **ozone** was bubbled. **Ozone killed E. coli** in solution

L38 ANSWER 7 OF 15 MEDLINE on STN DUPLICATE 3
2001335889. PubMed ID: 11403125. Inactivation of *Escherichia coli* O157:H7, *Listeria monocytogenes*, and *Lactobacillus leichmannii* by combinations of **ozone** and pulsed electric field. Unal R; Kim J G; Yousef A E. (Department of Food Science and Technology, The Ohio State University, Columbus 43210, USA.) Journal of food protection, (2001 Jun) Vol. 64, No. 6, pp. 777-82. Journal code: 7703944. ISSN: 0362-028X. Pub. country: United States. Language: English.

AB Pulsed electric field (PEF) and **ozone** technologies are nonthermal processing methods with potential applications in the food industry. This research was performed to explore the potential synergy between **ozone** and PEF treatments against selected foodborne bacteria. Cells of *Lactobacillus leichmannii* ATCC 4797, *Escherichia coli* O157:H7 ATCC 35150, and *Listeria monocytogenes* Scott A were suspended in 0.1% NaCl and treated with **ozone**, PEF, and **ozone** plus PEF. Cells were treated with 0.25 to 1.00 microg of **ozone** per ml of cell suspension, PEF at 10 to 30 kV/cm, and selected combinations of **ozone** and PEF. Synergy between **ozone** and PEF varied with the treatment level and the bacterium treated. *L. leichmannii* treated with PEF (20 kV/cm) after exposure to 0.75 and 1.00 microg/ml of **ozone** was inactivated by 7.1 and 7.2 log10 CFU/ml, respectively; however, **ozone** at 0.75 and 1.00 microg/ml and PEF at 20 kV/cm inactivated 2.2, 3.6, and 1.3 log10 CFU/ml, respectively. Similarly, **ozone** at 0.5 and 0.75 microg/ml inactivated 0.5 and 1.8 log10 CFU/ml of *E. coli*, PEF at 15 kV/cm inactivated 1.8 log10 CFU/ml, and **ozone** at 0.5 and 0.75 microg/ml followed by PEF (15 kV/cm) inactivated 2.9 and 3.6 log10 CFU/ml, respectively. Populations of *L. monocytogenes* decreased 0.1, 0.5, 3.0, 3.9, and 0.8 log10 CFU/ml when treated with 0.25, 0.5, 0.75, and 1.0 microg/ml of **ozone** and PEF (15 kV/cm), respectively; however, when the bacterium was treated with 15 kV/cm, after exposure to 0.25, 0.5, and 0.75 microg/ml of **ozone**, 1.7, 2.0, and 3.9 log10 CFU/ml were **killed**, respectively. In conclusion, exposure of *L. leichmannii*, *E. coli*, and *L. monocytogenes* to **ozone** followed by the PEF treatment showed a synergistic bactericidal effect. This synergy was most apparent with mild doses of **ozone** against *L. leichmannii*.

L38 ANSWER 8 OF 15 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN DUPLICATE 4
2001224959 EMBASE Impairment of microbial killing and superoxide-producing activities of alveolar macrophages by a low level of **ozone**. Mochitate K.; Katagiri K.; Miura T.; K. Mochitate, Environ. Health Sciences Division, Natl. Inst. for Environ. Studies, 16-2 Onogawa,

Tsukuba, Ibaraki 305-0053, Japan. mochitat@nies.go.jp. Journal of Health Science Vol. 47, No. 3, pp. 302-309 2001.
Refs: 30.

ISSN: 1344-9702. CODEN: JHSCFD

Pub. Country: Japan. Language: English. Summary Language: English.

Entered STN: 20010717. Last Updated on STN: 20010717

- AB Male Wistar rats were exposed to 0.2 ppm **ozone** for up to 14 days, during which alveolar macrophages were collected by pulmonary lavage to assess the effect of **ozone** on their microbial killing and superoxide-producing activities. For rapid assessment of microbial killing activity, we measured the release of (3)H-radioactivity into the supernatant by deoxycholate-lysis of the macrophages that had phagocytosed and **killed** (3)H-uridine-labeled microbes. The killing activity against *Escherichia coli* and *Candida albicans* was reduced to 70-80% of control levels on day 3. However, phagocytosis by and the activity of lysosomal enzymes of the macrophages were not impaired. On day 14 the killing activity against *E. coli* had returned to control levels, whereas that against *C. albicans* was still reduced. Because active oxygen species plays an important role in microbial killing activity of macrophages, the effects of **ozone** on respiratory burst and superoxide production were examined. Aliquots of alveolar macrophages were stimulated with phorbol myristate acetate (PMA), opsonized zymosan, or lipopolysaccharide (LPS) plus cytochalasin E (Cyt.E). The respiratory burst, oxygen consumption for rapid superoxide production, was decreased to 60-80% of control levels on day 3. On day 14, the respiratory burst by opsonized zymosan was still 80% reduced, whereas that by PMA or LPS plus Cyt.E had returned to control levels. In addition, the superoxide-producing activity of **ozone**-exposed macrophages was 10-60% decreased on day 3. On day 14, the superoxide production by stimulation with opsonized zymosan was still 60% reduced, whereas that by PMA or LPS plus Cyt.E had returned to control levels. In conclusion, because of their decreased production of superoxide, the host defense activity of alveolar macrophages was impaired by in vivo exposure to 0.2 ppm **ozone**. In particular, the *C. albicans*-associated defect lasted throughout the exposure period.

L38 ANSWER 9 OF 15 MEDLINE on STN

2001396497. PubMed ID: 11447890. Reviewing efficacy of alternative water treatment techniques. Hambidge A. Health estate, (2001 Jun) Vol. 55, No. 6, pp. 23-5. Journal code: 100888268. Pub. country: England: United Kingdom. Language: English.

- AB This section is designed to provide a brief summary of some of the findings. A good deal of work has been conducted by Mr N. L. Pavey and the team at BSRIA, Bracknell. The BSRIA publications are an excellent source of further information. Ultraviolet radiation: UV radiation of wavelength 254 nm destroys bacteria by a mechanism of damaging nucleic acids by producing thymine dimers which disrupt DNA replication [Gavdy and Gavdy, 1980]. *L. pneumophila* has been reported as sensitive to UV dosages of 2,500-7,000 uWs/cm2 [Antopol & Ellner, 1979; Knudson, 1985]. Antopol and Ellner [1979] examined the susceptibility of *L. pneumophila* to UV dosage. Their results indicated that 50% of the organisms were **killed** by 380 uWs/cm2 and 90% were **killed** by 920 uWs/cm2. Kills of 99 and 99.9% were obtained using 1,840 and 2,760 uWs/cm2 respectively. Muraca et al [1987] showed that continuous UV irradiation resulted in a 5 logarithm decrease in waterborne *L. pneumophila* in a circulating system. Gilpin [1984] reported that in laboratory buffer solutions, exposure to 1 uW of UV radiation per cm2 achieved a 50% kill of *L. longbeachae* in 5 minutes, *L. gormanii* in 2-30 minutes and *L. pneumophila* in 17 minutes. Exposure times for 99% kills for *L. longbeachae*, *L. pneumophila* and *L. Gormanii* were 33, 48 and 63 minutes respectively. The same research worker conducted experiments using a 3 litre circulating water system, connected to a stainless steel housing

containing a UV source. The UV lamp output was 7 ergs/mm² per second per 100 cm at 254 nm. *L. pneumophila* was **killed** within 15 seconds, that is within their first pass through the system. Continuous disinfection with UV has the advantages of imparting no taste, odour or harmful chemical by-products and requires minimal operation and maintenance [Muraca et al 1988]. Keevil et al [1989] state that UV irradiation fails to clear systems of biofilm because of poor penetration into microflocs of the micro-organisms. Copper/silver ionisation: A recent study of full scale hot water test rigs incorporating copper-silver ionisation systems has been reported by Pavey, 1996. Copper and silver ions were introduced into the water by electrolysis. One of the principal mechanisms of biocidal action of these ions is thought to be cell penetration. The positively charged copper ions form electrostatic bonds with negatively charged sites on the cell wall. The cell membrane is thus distorted, allowing ingress of silver ions which attack the cell by binding at specific sites to DNA, RNA, respiratory enzymes and cellular protein, causing catastrophic failure of the life support systems of the cell. Silver and copper ion concentrations of 40 and 400 ug/L respectively were effective against planktonic *Legionella* in cold water systems and hot water systems containing soft water. In hard water, the ionisation was ineffective due to the inability to control silver ion concentrations. This was caused by scaling of the electrodes and silver ion complexation by the high concentration of dissolved solids. Bosch et al [1993] had earlier extended the application of copper-silver disinfection to human enteric viruses in water, such as adenovirus, rotavirus, hepatitis A virus, and poliovirus. Their work showed that copper and silver ions in the presence of reduced levels of free chlorine did not ensure the total elimination of viral pathogens from water. In the case of an amoeba, *Naegleria fowleri* [responsible for primary amoebic meningoencephalitis], Cassells et al [1995] have demonstrated that a combination of silver and copper ions were ineffective at inactivating the amoebae at 80 and 800 ug/L respectively. However addition of 1.0 mg/L free chlorine produced a synergistic effect, with superior inactivation relative to either chlorine or silver-copper in isolation. A similar synergy was reported by Yahya et al [1989] in their study of *Staphylococcus* sp. and *Pseudomonas aeruginosa*. Yahya et al [1992] also suggested an additive or synergistic effect in the inactivation of coliphage MS-2 and poliovirus. Other techniques: There are a number of other techniques. We have conducted trials of most of these in the control of *Legionella* sp., but these fall out of the scope of this article, and as such less emphasis has been placed on them here. Ozonation: **Ozone** [O₃] is an oxidising gas, generated electrically from oxygen [O₂]. *L. pneumophila* can be **killed** at < 1 mg/L of **ozone** [Edelstien et al 1982]. Muraca et al [1987] found that 1-2 mg/L of continuous **ozone** over a six hour contact time, produced a 5 logarithm decrease of *L. pneumophila*. The effectiveness of **ozone** treatment against a range of bacteria and coliphages has been studied Botzenhart et al [1993]. **E. coli** was least resistant to **ozone**, followed by MS 2-coliphage and PhiX 174-coliphage, with *L. pneumophila* and *Bacillus subtilis* spores being the most resistant. (ABSTRACT TRUNCATED)

L38 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

1999:347130 Document No. 131:184089 Disinfection of fresh vegetables by various means and the bactericidal effects of strong acidic electrolyzed solution on enteropathogenic bacteria. Ueda, Shigeo; Kuwabara, Yoshihiro (Hygiene Laboratory, Kagawa Nutrition University, Saitama, Sakado-shi, Chiyoda, 350-0214, Japan). *Bokin Bobai*, 27(5), 301-307 (Japanese) 1999. CODEN: BOBODP. ISSN: 0385-5201. Publisher: Nippon Bokin Bobai Gakkai.

AB Five kinds of fresh salad vegetables such as parsley, sprouts, sani-lettuce, cabbage and cucumber were washed and disinfected for 5 min in various disinfectants and detergents including strong or weak acidic

electrolyzing solns., **ozone**-water, hypochlorite solution, acetic acid solution, com. detergents and so on. Total aerobic bacterial counts of vegetables were depressed more effectively by these treatments than by washing only with tap water. Particularly, the treatment with a strong acidic electrolyzing solution decreased the bacterial counts by about 10-2cfu/g on all vegetables. Furthermore, among 17 kinds of vegetables treated with strong acidic electrolyzed solution, cabbage, sani-lettuce, lettuce, spinach and parsley had decreases in bacterial counts in the ranges of 10-2-103cuff/g. Similarly, coliforms, faecal **E. coli** and **B. cereus** were shown to decrease in number on all of vegetables after the treatment. The bacterial effects of strong acidic electrolyzing solns. and hypochlorite solns. with the same levels of active chlorine on various types of bacterial were examined. Although gram neg. bacterial were **killed** within 3 min and staphylococci were completely **killed** within 30 s after exposure to the acidic electrolyzing solution, the time needed to kill spore-forming bacteria was more than 5 min. The bactericidal activity of strong acidic electrolyzing solns. was shown to be relatively higher than that of hypochlorite solns.

L38 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN

1999:502120 Document No. 132:89295 Experimental observation on germicidal efficacy of TT-100-type **ozone** disinfectant. Liao, Ruyan; Lin, Jinyan; Chen, Wensheng; Huang, Xianzhong; Chen, Hongmin (Guangdong Provincial Sanitary and Anti-Epidemic Station, Canton, 510300, Peop. Rep. China). Zhongguo Xiaoduxue Zazhi, 16(2), 84-87 (Chinese) 1999. CODEN: ZXZAFO. ISSN: 1001-7658. Publisher: Zhongguo Xiaoduxue Zazhi Bianjibu.

AB TT-100-type **Ozone** Disinfectant generates **ozone** 1.50-1.62 mg/min in average. The killing rates of *Escherichia coli* and *Staphylococcus aureus* in artificially contaminated water were 100% after introduction of **ozone** generated by operation of the disinfectant for 5 min and 10 min into the water resp. The killing rate of *Bacillus subtilis* var. *niger* spores in water was only 81.23% after introduction of **ozone** for 30 min. Immersion of bacteria carriers made by different materials and contaminated with **E. coli** or *S. aureus* in water which was then treated with introduction of **ozone** for 15 min **killed** more than 99.9% of the bacteria on surfaces of aluminum and glass carriers and less than 99.9% of the bacteria on cloth and paper carriers. Natural bacteria test indicated that immersion of spinach and apples in water which was then treated with introduction of **ozone** for 15 min **killed** more than 94.9% of the natural bacteria on their surfaces. Introduction of **ozone** generated by disinfectant for 15 min into a 18 m3 unoccupied room could reduce the total air bacteria count by 83.83%.

L38 ANSWER 12 OF 15 MEDLINE on STN

DUPLICATE 5

96035678. PubMed ID: 7574656. Efficacy of ozonated water against various food-related microorganisms. Restaino L; Frampton E W; Hemphill J B; Palnikar P. (R & F Laboratories, Inc., Bridgeview, Illinois 60455, USA.) Applied and environmental microbiology, (1995 Sep) Vol. 61, No. 9, pp. 3471-5. Journal code: 7605801. ISSN: 0099-2240. Pub. country: United States. Language: English.

AB The antimicrobial effects of ozonated water in a recirculating concurrent reactor were evaluated against four gram-positive and four gram-negative bacteria, two yeasts, and spores of *Aspergillus niger*. More than 5 log units each of *Salmonella typhimurium* and *Escherichia coli* cells were **killed** instantaneously in ozonated water with or without addition of 20 ppm of soluble starch (SS). In ozonated water, death rates among the gram-negative bacteria--*S. typhimurium*, **E. coli**, *Pseudomonas aeruginosa*, and *Yersinia enterocolitica*--were not significantly different ($P > 0.05$). Among gram-positive bacteria, *Listeria monocytogenes* was significantly $P < 0.05$ more sensitive than either *Staphylococcus aureus* or *Enterococcus faecalis*. In the presence of

organic material, death rates of *S. aureus* compared with *L. monocytogenes* and *E. coli* compared with *S. typhimurium* in ozonated water were not significantly ($P > 0.05$) affected by SS addition but were significantly reduced ($P < 0.05$) by addition of 20 ppm of bovine serum albumin (BSA). More than 4.5 log units each of *Candida albicans* and *Zygosaccharomyces bailii* cells were **killed** instantaneously in ozonated water, whereas less than 1 log unit of *Aspergillus niger* spores was **killed** after a 5-min exposure. The average **ozone** output levels in the deionized water (0.188 mg/ml) or water with SS (0.198 mg/ml) did not differ significantly ($P < 0.05$) but were significantly lower in water containing BSA (0.149 mg/ml).

- L38 ANSWER 13 OF 15 MEDLINE on STN DUPLICATE 6
 96072457. PubMed ID: 8568283. In vivo chemoactivation of oyster hemocytes induced by bacterial secretion products. Alvarez M R; Friedl F E; Roman F R. (Department of Biology, University of South Florida, Tampa 33620-5150, USA.) Journal of invertebrate pathology, (1995 Nov) Vol. 66, No. 3, pp. 287-92. Journal code: 0014067. ISSN: 0022-2011. Pub. country: United States. Language: English.
- AB Movements of tissue hemocytes in the Eastern oyster *Crassostrea virginica* were monitored and quantified by image analysis of sections following inoculation with agar cores containing *Escherichia coli* or cell-free medium on which the bacteria had previously grown. Hemocytes respond to the presence of live bacteria by accumulating in widely dispersed areas of tissue surrounding the gut and digestive diverticula. The response is rapid and evident within 40 min, is maximal at 1 hr, and declines by 3 hr after inoculation. Sterile implanted agar cores do not produce a response. Bacteria **killed** with **ozone** elicit a response when inoculated together with the medium on which they had grown while bacteria **killed** by heat or formalin do not. **Killed** bacteria suspended in saline fail to stimulate hemocyte chemokinesis. Cell-free medium applied externally produces a response equal to that measured with live bacteria inoculated internally. Extraction of bacteria-free medium with hexane does not significantly reduce hemocyte chemokinesis. Digestion of bacteria-free medium with pronase completely eliminates chemokinesis. Molecular filtrates of bacteria-free medium induce maximal chemokinetic response at molecular weight as low as 1 kDa. These data show that the oyster hemocyte activators produced by *E. coli* are most likely low-molecular-weight polypeptides which diffuse from the site of inoculation and can pass through the intact external surface epithelium to induce a chemokinetic response.
- L38 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
 1992:423156 Document No. 117:23156 Growth delay and inactivation of intracellular catalase of resting *Escherichia coli* K-12 cells exposed to **ozone**. Shimada, Keiko; Takahashi, Minako; Shimahara, Kenzo (Eng. Coll., Seikei Univ., Tokyo, Japan). Seikei Daigaku Kogakubu Kogaku Hokoku, 53, 3607-8 (Japanese) 1992. CODEN: SKKGAW. ISSN: 0582-4184.
- AB An *E. coli* culture in a 100 μ M **ozone** solution lost .apprx.90% of its catalase activity and >99% of the cells were **killed**. Repeated exposure (5 min each) of the cells to fresh solns. of **ozone** resulted in more extensive killing than a single exposure.
- L38 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2007 ACS on STN
 1963:54974 Document No. 58:54974 Original Reference No. 58:9438a-c Effect of **ozone** on survival and permeability of *Escherichia coli*. McNair Scott, D. B.; Leshner, E. C. (Univ. of Pennsylvania, Philadelphia). Journal of Bacteriology, 85, 567-76 (Unavailable) 1963. CODEN: JOBAAY. ISSN: 0021-9193.
- AB *E. coli* cultures in the logarithmic phase or resting

were treated with various concns. of **ozone** in saline solution
 Approx. 2 + 107 mols. of **ozone** per bacterium
killed 50% of the cells. **Ozone** caused leakage of cell
 content into the medium, and lysis of some cells. Low concns. did not
 react with the glutathione within the cells, although reaction with
 glutathione in solution was immediate and stoichiometric. The effect on
 nucleic acid within the cells was to change the solubility and to cause the
 release of ultraviolet-absorbing material into the medium. **Ozone**
 attacked the ring structure of the base or the carbohydrate only when the
 substance was in the medium. Nucleic acids released into the medium were
 reabsorbed by cells which were not, lysed. Viable cells resumed growth
 immediately, and grew at rates determined by the nutrients either added to the
 medium or which resulted from leakage and lysis of nonviable cells. It is
 postulated that the primary attack of **ozone** was on the cell wall
 or membrane of the bacteria, probably by reaction with the double bonds of
 lipids, and that leakage or lysis of the cells depended on the extent of
 that reaction.

=> s l1l adn alcohol
 MISSING OPERATOR L11 ADN
 The search profile that was entered contains terms or
 nested terms that are not separated by a logical operator.

=> s l1l and alcohol
 L39 29 L11 AND ALCOHOL
 => dup remove l39
 PROCESSING COMPLETED FOR L39
 L40 19 DUP REMOVE L39 (10 DUPLICATES REMOVED)

=> d l40 1-19 cbib abs

L40 ANSWER 1 OF 19 MEDLINE on STN DUPLICATE 1
 2003003037. PubMed ID: 12475283. Green-leaf-derived C6-aroma compounds
 with potent antibacterial action that act on both Gram-negative and
 Gram-positive bacteria. Nakamura Soichiro; Hatanaka Akikazu. (Department
 of Life and Environmental Sciences, Shimane University, Shimane 690-8550,.
 Japan.soichiro@edu.shimane-u.ac.jp) . Journal of agricultural and food
 chemistry, (2002 Dec 18) Vol. 50, No. 26, pp. 7639-44. Journal code:
 0374755. ISSN: 0021-8561. Pub. country: United States. Language: English.
 AB All eight C6-aliphatic **alcohol** and aldehyde compounds in
 naturally occurring green leaves showed bacteriostatic effects against
 Staphylococcus aureus IFO 12732, methicillin-resistant S. aureus,
 Escherichia coli IFO 3301, **E. coli** 0157:H7, and
 Salmonella enteritidis, with bacteriostatic activities of less than 12.5
 microg mL(-1). In this study, the susceptibility of Gram-positive
 bacteria tested was observed to be greater than that of Gram-negative
 bacteria. The bactericidal action of the aldehyde compounds was found to
 be much stronger than that of the **alcohol** compounds under both
 liquid and gaseous conditions. The most effective compound was
 (3E)-hexenal at concentrations of 0.1 and 1 microg mL(-1), which
killed 2.1 x 10(5) cfu mL(-1) of S. aureus IFO 12732 and 1.4 x
 10(5) cfu mL(-1) of **E. coli** IFO 3301, respectively, by
 direct contact with the compound. Lethality of (3E)-hexenal against S.
 aureus IFO 12732 and **E. coli** IFO 3301 was also
 observed as a result of gaseous contact at concentrations of 3 and 30
 microg mL(-1), respectively. The bactericidal effects of 30 microg mL(-1)
 (3E)-hexenal were thoroughly maintained throughout periods of 2 days and 1
 day against S. aureus IFO 12732 and **E. coli** IFO 3301,
 respectively, by a complex formation with alpha-cyclodextrin.

2002:369022 The Genuine Article (R) Number: 543LZ. Liver sinusoidal endothelial cell injury by neutrophils in rats with acute obstructive cholangitis. Gong J P (Reprint); Wu C X; Liu C A; Li S W; Shi Y J; Li X H; Peng Y. Chongqing Univ Med Sci, Coll Clin Med 2, Dept Gen Surg, 74 Linjiang Rd, Chongqing 400010, Peoples R China (Reprint); Chongqing Univ Med Sci, Coll Clin Med 2, Dept Gen Surg, Chongqing 400010, Peoples R China; Chongqing Univ Med Sci, Affiliated Hosp 2, Chongqing 400010, Peoples R China. WORLD JOURNAL OF GASTROENTEROLOGY (APR 2002) Vol. 8, No. 2, pp. 342-345. ISSN: 1007-9327. Publisher: W J G PRESS, PO BOX 2345, BEIJING 100023, PEOPLES R CHINA. Language: English.
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB AMI: The objective of this study is to elucidate the potential role of poly-morphonuclear neutrophils (PMN) in the development of such a sinusoidal endothelial cell (SEC) injury during early acute obstructive cholangitis (AOC) in rats.

METHODS: Twenty one Wistar rats were divided into three groups: the ACC group, the bile duct ligated group (BDL group), and the sham operation group (SO group). The common bile duct (CBD) of rats in ACC group was doubly ligated and 0.2 ml of the *E. coli* O-111 B-4 (5 x 10⁹ cfu/ml) suspension was injected into the upper segment, in BDL group, only the CBD was ligated and in SO group, neither injection of *E. coli* suspension nor CBD ligation was done, but the same operative procedure. Such group consisted of seven rats, all animals were killed 6 h after the operation. Morphological changes of the liver were observed under light and electron microscope. Expression of intercellular adhesion molecule-1 (ICAM-1) mRNA in hepatic tissue was determined with reverse transcription polymerase chain reaction (RT-PCR). The serum levels of alanine aminotransferase (ALT) were determined with autoanalyser and cytokine-induced neutrophil chemoattractant (CINC) was determined by enzyme-linked immunosorbent assay (ELISA).

RESULTS: Neutrophils were accumulated in the hepatic sinusoids and sinusoidal endothelial cell injury existed in ACC group. In contrast, in rats of BDL group, all the features of SEC damage were greatly reduced. Expression of ICAM-1 mRNA in hepatic tissue in three groups were 7.54 +/- 0.82, 2.87 +/- 0.34, and 1.01 +/- 0.12, respectively. There were significant differences among three groups (P < 0.05). The serum CINC levels in the three groups were 188 +/- 21 ng. L-1, 94 +/- 11 ng. L-1, and 57 +/- 8 ng. L-1, respectively. There were also significant differences among the three groups (P < 0.05). Activity of the serum ALT was 917 +/- 167 U/L; 167 U/L; L-1. 901 +/- 171 U/L; L-1. and 908 +/- 164 U/L; L-1. respectively, (P < 0.005).

CONCLUSION: Hepatic SEC injury occurs earlier than hepatic parenchymal cells during AOC. Recruitments of circulating neutrophils in the hepatic sinusoidal space might mediate the SEC injury, and ICAM-1 in the liver may modulate the PMN of accumulation.

2001:421969 The Genuine Article (R) Number: 431MG. Wine has activity against entero-pathogenic bacteria in vitro but not in vivo. Sugita-Konishi Y (Reprint); Hara-Kudo Y; Iwamoto T; Kondo K. Natl Inst Infect Dis, Dept Biomed Food Res, Shinjuku Ku, 1-23-1 Toyama, Tokyo 1628640, Japan (Reprint); Natl Inst Infect Dis, Dept Biomed Food Res, Shinjuku Ku, Tokyo 1628640, Japan; Natl Inst Hlth & Nutr, Dept Food Sci, Shinjuku Ku, Tokyo 1628640, Japan; Ochanomizu Univ, Fac Human Life & Environm Sci, Bunkyo Ku, Tokyo 1128610, Japan. BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY (APR 2001) Vol. 65, No. 4, pp. 954-957. ISSN: 0916-8451. Publisher: JAPAN SOC BIOSCI BIOTECHN AGROCHEM, JAPAN ACAD SOC CTR BLDG, 2-4-6 YAYOI BUNKYO-KU, TOKYO, 113, JAPAN. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We studied the activity of wine against entero-pathogenic bacteria both *lit vitro* and *in vivo*. The food-borne bacteria were **killed** in both red and white wine within 30 min. However the results of a *Salmonella* infection experiment using mice suggested that wine was not effective in preventing food-borne diseases *in vivo*.

L40 ANSWER 4 OF 19 SCISEARCH COPYRIGHT (c) 2007 The Thomson Corporation on STN

2001:768601 The Genuine Article (R) Number: 474KC. Role of the outer membrane of *Escherichia coli* AG100 and *Pseudomonas aeruginosa* NCTC 6749 and resistance/susceptibility to monoterpenes of similar chemical structure. Griffin S G (Reprint); Wyllie S G; Markham J L. Univ Western Sydney, Ctr Biostruct & Biomol Res, Richmond, NSW 2753, Australia (Reprint). JOURNAL OF ESSENTIAL OIL RESEARCH (SEP-OCT 2001) Vol. 13, No. 5, pp. 380-386. ISSN: 1041-2905. Publisher: ALLURED PUBL CORP, 362 S SCHMALE RD, CAROL STREAM, IL 60188-2787 USA. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Four pairs of oxygenated terpenes, with closely related chemical structures but considerably different minimum inhibitory concentration values (1) against *F. aeruginosa* or *E. coh*, showed differences in rate of cells **killed** over 2 h. Addition of polymyxin B nonapeptide (PMBN) as an outer membrane permeabilising agent was found to significantly increase the initial rates and overall numbers of cells **killed** for all compounds. The hydrocarbon limonene and the ester geranyl acetate, normally inactive, were also investigated. Both compounds had little killing effect when added alone to the cells but did show an enhanced killing capacity upon the addition of PMBN.

L40 ANSWER 5 OF 19 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN 1999:466466 Document No.: PREV199900466466. Survival of bacteria at a subfreezing temperature (-1degreeC). Tanaka, Yoshinori [Reprint author];

Ishino, Tsuyoshi [Reprint author]; Matsuba, Takashi [Reprint author]; Takayama, Hisao [Reprint author]; Ishida, Shigeru. Department of Bacteriology, Faculty of Medicine, Tottori University, Yonago, 683-0826, Japan. Yonago Acta Medica, (July, 1999) Vol. 42, No. 2, pp. 147-152. print.

CODEN: YOAMAQ. ISSN: 0513-5710. Language: English.

AB Preservation of foodstuffs at temperatures around -1degreeC has attracted special interest recently. We investigated whether bacteria contaminating foodstuffs, especially contaminating fish, were **killed** or survived at -1degreeC compared with 37degreeC. Survival rates of *Escherichia coli* K12 and *Staphylococcus aureus* IF012732 in nutrient broth at -1degreeC for 7 days were 52% and 31%, respectively. However, the survival rate of *Vibrio parahaemolyticus* in nutrient broth containing 3% NaCl at -1degreeC for 7 days was only 0.03%. When the bacteria were kept in a soy sauce solution containing alcohol and some seasonings (the soy sauce solution) at -1degreeC, survival rates of *E. coli* K12 and *S. aureus* IF012732 after 2 days were 56% and 54%, respectively, but *V. parahaemolyticus* was completely **killed** after 24 h at -1degreeC in the soy sauce solution. When *E. coli* K12 and O157 and *V. parahaemolyticus* were incubated at -1degreeC in the soy sauce solution containing some pieces of raw fish (the improved soy sauce solution), 3 strains of the bacteria were not **killed**. These results indicate that bacteria contaminating fish are not **killed** at -1degreeC and that storage of fish at -1degreeC is not always effective in diminishing food poisoning.

L40 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

1998:642268 Document No. 129:274986 Reduction of *Escherichia coli* O157:H7 population in soy sauce, a fermented seasoning. Masuda, Susumu; Hara-Kudo, Yukiko; Kumagai, Susumu (Noda Inst. Sci. Res., Noda, 278,

Japan). Nippon Shoyu Kenkyusho Zasshi, 24(5), 275-281 (Japanese) 1998.
CODEN: NSKZDP. ISSN: 0286-7958. Publisher: Nippon Shoyu Kenkyusho.

AB The pathogenic **E. coli**, **E. coli**

O157:H7, was added to soy sauce, and the effect of soy sauce against the growth of O157:H7 was examined. The incubation at 30°C in soy sauce diminished the viable cells for 9 days. The bactericidal effect of soy sauce against the O157 strain was dependent on the temperature condition. The bactericidal effect was weak at 18°C, and there was no cell reduction effect at below 4°C. Even at the low temps., the O157 did not propagate in the soy sauce. Soy sauce was bactericidal at high temps. and bacteriostatic at low temps. Those effect of soy sauce against O157:H7 was dependent on the NaCl concentration, **alc.** concentration, pH, the kinds of organic acids, addition of preservatives, temps., and treatment time. Soy

sauce

products confirmed to be safe from the contamination of **E. coli** O157:H7, because the bacterium will be **killed** by the soy sauce making processes such as fermentation, aging, and sterilization. As soy sauce products are preserved and sold at an ambient temperature, there

is

no chance for the bacterium to grow in the soy sauce products.

L40 ANSWER 7 OF 19 MEDLINE on STN DUPLICATE 2

91042421. PubMed ID: 2146486. **Alcohol** treatment of defective lambda lysogens is deletionogenic. Hayes S; Duncan D; Hayes C. (Department of Microbiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada.) Molecular & general genetics : MGG, (1990 Jun) Vol. 222, No. 1, pp. 17-24. Journal code: 0125036. ISSN: 0026-8925. Pub. country: GERMANY: Germany, Federal Republic of. Language: English.

AB We ascertained that transient exposure to ethanol, above 18%, was deletionogenic to an Escherichia coli strain with a fragment (12.5 kb) of bacteriophage lambda integrated within the chromosome. The lambda attL B.P' through P fragment provided a forward selection for mutants, and a target for mutagenesis. The cells were **killed** by thermal derepression of transcription and replication of the lambda fragment when transferred from 30 degrees to 42 degrees C. Survivor mutants, capable of forming colonies at 42 degrees C, were selected from untreated starting cells. About half no longer supported marker rescue of the lambda fragment imm lambda (immunity) region, comprising the cI repressor, and the PL and PR promoters. Ethanol treatment of starting cells increased the occurrence of imm lambda-defective clones to near 100%. The mutations responsible for the imm lambda defect were found to be large deletions (12 kb or more of DNA). Ethanol treatment of the starting cells also produced a 5- to 18-fold increase in the occurrence of **E. coli** pgl mutations, which likely arose by the deletion mechanism generating the imm lambda defects, since pgl was closely linked to the integrated lambda fragment. A unifying hypothesis for these observations was that ethanol was deletionogenic. The inclusion or substitution of the int-kil segment of the lambda fragment produced no real change in the spontaneous occurrence of large imm lambda deletions from the untreated cells. Substitution of this segment suppressed the deletionogenic effect of ethanol, implying a prerequisite for sequence homology or gene function from this interval. (ABSTRACT TRUNCATED AT 250 WORDS)

L40 ANSWER 8 OF 19 MEDLINE on STN DUPLICATE 3

88258341. PubMed ID: 3290376. Efficacy of various methods of sterilization of acupuncture needles. Sisco V; Winters L L; Zange L L; Brennan P C. (Department of Microbiology, National College of Chiropractic, Lombard, IL 60148.) Journal of manipulative and physiological therapeutics, (1988 Apr) Vol. 11, No. 2, pp. 94-7. Journal code: 7807107. ISSN: 0161-4754. Pub. country: United States. Language: English.

AB The iatrogenic transmission of hepatitis B virus by inadequately sterilized acupuncture needles recently has been reported. Because some

licensed chiropractors use acupuncture as a therapeutic modality, we have evaluated sterilization methods for these needles, which would be adaptable for use in a chiropractic office. Dry heat, boiling water, pressurized steam, sodium hypochlorite, and 70% **alcohol** were compared with a glass bead dry heat sterilizer originally developed for dental instruments. Presterilized acupuncture needles were contaminated with *Bacillus stearothermophilus*, *Escherichia coli* or *Staphylococcus epidermidis* and sterilized for intervals ranging from 5 sec to 30 min. The needles were then cultured to determine the efficacy of the sterilization regimen. Seventy percent **alcohol** was ineffective as a sterilization method. In terms of both time and convenience, the glass bead apparatus was the most efficient of the remaining methods tested. *B. stearothermophilus*-contaminated acupuncture needles were sterilized within 10 sec of exposure to preheated glass beads. Less than 10 sec exposure **killed E. coli** and *S. epidermidis*. A significant advantage of the glass bead sterilizer over the other methods was the absence of physical damage to the needles.

L40 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

1987:418941 Document No. 107:18941 A molecular analysis of the RK mutatest. Gordon, Alasdair J. E.; Glickman, Barry W. (Dep. Biol., York Univ., Toronto, ON, M3J 1P3, Can.). Mutation Research, 190(4), 253-8 (English) 1987. CODEN: MUREAV. ISSN: 0027-5107.

AB The replicative killing (RK) test for detection of mutagens (in which *Escherichia coli* cells are **killed** by derepression of λ -DNA fragment based on temperature $\geq 39^\circ$) has been reported to show mutagenesis from EtOH; the RK tester strains CHY832 and SA431 of **E. coli** were hybridized with viral DNA. The expected extents of λ -DNA fragments in the strains were found but the complete mechanism of the RK mutatest is not understood.

L40 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

1985:73951 Document No. 102:73951 **Alcohol**-induced suppression of the humoral immune response. Stolen, J. S.; Draxler, S.; Nagle, J. J. (Northeast Fish. Cent., Natl. Mar. Fish. Serv., Highlands, NJ, 07732, USA). Bulletin of Environmental Contamination and Toxicology, 34(1), 106-8 (English) 1985. CODEN: BECTA6. ISSN: 0007-4861.

AB Summer flounder (*Paralichthys dentatus*) pretreated with EtOH [64-17-5] or with EtOH + Aroclor 1254 [11097-69-1] showed a complete suppression of the immune response to formalin-**killed** human enteric *Escherichia coli* cells after their injection for 42 days. In nonpretreated fish agglutinating antibodies to **E. coli** were detected after 7 days. The EtOH + Aroclor 1254 pretreatment had a more pronounced immunosuppression than EtOH alone.

L40 ANSWER 11 OF 19 MEDLINE on STN

DUPLICATE 4

84128718. PubMed ID: 6199044. Changes in streptonigrin lethality during adaptation of *Escherichia coli* to picolinic acid. Correlation with intracellular picolinate and iron uptake. Yeowell H N; White J R. Biochimica et biophysica acta, (1984 Mar 1) Vol. 797, No. 3, pp. 302-11. Journal code: 0217513. ISSN: 0006-3002. Pub. country: Netherlands. Language: English.

AB Uptake studies with [^{14}C]picolinate and $^{55}\text{Fe}^{3+}$ have provided an explanation for the change in streptonigrin killing on adaptation of *Escherichia coli* to picolinate, in terms of the available iron within the cell. When picolinic acid is added to a growing culture of **E. coli** an interval of bacteriostasis ensues; this adaptation period is followed by resumption of exponential growth. Addition of picolinate (4 mM) to a log phase culture of strain W3110 gave protection from the lethal action of streptonigrin (30 microM) when the two agents were added simultaneously. In contrast streptonigrin **killed** cells that had adapted to picolinate; however, a preincubation of adapted W3110 with

phenethyl **alcohol** protected the cells from streptonigrin lethality. [¹⁴C]Picolinate uptake studies showed that initially picolinate entered the cells, but that it was excluded from adapted cells; addition of phenethyl **alcohol** permitted the entry of picolinate into adapted W3110. The changes in streptonigrin killing parallel the changes in concentration of intracellular picolinate, which can chelate the iron required by streptonigrin for its bactericidal action. ⁵⁵Fe³⁺ uptake studies showed that initially picolinate prevented iron accumulation by strain W3110, whereas adapted cells did take up iron in the presence of picolinate. Addition of phenethyl **alcohol** prevented any observed uptake of iron by adapted W3110. This modulation of iron transport by picolinate also affects streptonigrin lethality. Experiments with iron transport mutants showed that picolinate acted on both the enterochelin and citrate routes of uptake. Therefore picolinate affects the concentration of available iron within the cell both by (a) its intracellular presence resulting in chelation of iron and (b) its action on iron uptake; these effects explain the change in streptonigrin killing on adaptation of *E. coli* to picolinate.

L40 ANSWER 12 OF 19 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

78282008 EMBASE Document No.: 1978282008. Possible sources of ethanol ante- and post-mortem: Its relationship to the biochemistry and microbiology of decomposition. Corry J.E.L.. Metrop. Police Forens. Sci. Lab., London, United Kingdom. Journal of Applied Bacteriology Vol. 44, No. 1, pp. 1-56 1978.

CODEN: JABAA4

Pub. Country: United Kingdom. Language: English.

AB Although ethanol can on rare occasions be detected in blood from living subjects who have not ingested **alcohol**, these levels never exceed 5 mg/100 ml. On the other hand, levels up to 150 mg/100 g have been detected in blood and tissues of putrefied human or rodent corpses. Ingestion of ethanol ante-mortem in these cases is known not to have taken place (in the case of the rodents), or is most unlikely to have taken place (in the case of humans). Production of ethanol has occurred, not only in tissues that have obviously putrefied, but within a relatively short time if temperatures are elevated (i.e. above about 15°C). Experience with decomposition of meat shows that high numbers of bacteria can be present without showing obvious signs of putrefaction. The limited evidence available suggests that ethanol is not formed post-mortem except by microbial action, and that ethanol is both produced and utilized, so that bodies with high initial levels will show a decrease, and bodies with low initial levels will show an increase. The method by which bacteria invade dead bodies is not entirely clear. However, the source appears to be mainly intestinal, although injury resulting in skin breakage immediately before death may introduce exogenous micro-organisms into the blood stream and throughout the body. There is evidence that bacteria may penetrate the intestinal walls during death and be distributed throughout the tissues in the blood stream, this may also occur during food absorption and from skin abrasions, etc. throughout life. Even after clinical death has occurred these organisms may be prevented from multiplying or actually **killed**, by the residual antimicrobial defences of the body, and the anaerobic organisms will be inhibited initially by the high Ph, but within a few hours, provided the temperature exceeds about 5°C, they will start to multiply. This primary invasion is probably reinforced by a secondary invasion of intestinal organisms, starting via the hepatic portal vein and the intestinal lymph system, and spreading round the body via the vascular system. Although the intestine harbours a wide variety of organisms, the majority obligate and fastidious anaerobes, only relatively few groups have been implicated as major colonizers of corpses during putrefaction; these include, in order of importance, *Cl. perfringens* (a vigorous saccharolytic, lipolytic

and proteolytic organism) and other Clostridium spp., enterobacteria (frequently, *E. coli* and Proteus spp.), Micrococccaeae (frequently Staph. aureus), streptococci and Bacillus spp. All of these are capable of producing ethanol from glucose and other substrates. In addition, a wider variety of organisms may be detected in the early stages of putrefaction, and these include yeasts, which may produce very high ethanol levels if present in sufficiently high numbers. Information on levels of substrates present shortly after death is sparse and further studies on this subject would be of interest. Glucose may be present in high levels in the liver and nearby blood and tissues, levels in the blood generally may be raised. Other possibly important sources are amino-acids (especially once proteolysis has commenced), glycerol (formed during fat hydrolysis), and lactate which occurs widely and at levels over 100 mg/100 g in all tissues. There is evidence that all these compounds can serve as substrates for ethanol production by bacteria commonly found in corpses. Forensic scientists must, therefore, always bear in mind that specimens of human tissue containing micro-organisms, particularly specimens taken from corpses, may contain ethanol produced by microbial fermentation, and that extreme caution should be exercised when assessing the significance of post-mortem ethanol.

L40 ANSWER 13 OF 19 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

78161559 EMBASE Document No.: 1978161559. Enhanced susceptibility of mice to combinations of A9 tetrahydrocannabinol and live or **killed** gram negative bacteria. Bradley S.G.; Munson A.E.; Dewey W.L.; Harris L.S.. Dept. Microbiol., Med. Coll. Virginia, Virginia Commonwealth Univ., Richmond, Va. 23298, United States. Infection and Immunity Vol. 17, No. 2, pp. 325-329 1977.
CODEN: INFIBR

AB Pub. Country: United States. Language: English.
Combinations of A9-tetrahydrocannabinol (A9-THC) and bacterial endotoxin were shown to be hyperadditively toxic for mice. A variety of purified lipopolysaccharide (LPS) preparations elicited enhanced mortality in combination with A9-THC. Escherichia coli O26:B6 LPS (Boivin preparation) at an essentially nonlethal dose of 2.5 mg/kg reduced the dose of A9-THC required to kill 50% of the treated mice from ca. 350 to 150 mg/kg. Inbred BALB, DBA, and C3H/HeCr mice, noninbred ICR mice, and hybrid CDF1 and BDF1 mice were hyperactive to combinations of A9-THC and LPS. Moreover, a variety of heat- **killed** intestinal and gram-negative bacteria, live *E. coli*, and complexes of lipid A with a variety of proteins substituted for LPS in the synergistic toxicity of LPS and A9-THC. Extracts of marijuana also elicited hyperreactivity to LPS. The hyperadditive lethality of combinations of A9-THC and LPS was markedly less in mice rendered refractory to LPS or A9-THC by repeated administration of LPS or A9-THC, respectively.

L40 ANSWER 14 OF 19 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

74186265 EMBASE Document No.: 1974186265. The photosensitizing action of carcinogens. I. The action of 2 naphthylamine on Escherichia coli K 12 and Paramacium caudatum. Ellis S.P.; Smith R.C.; Neely W.C.. Dept. Chem., Auburn Univ., Auburn, Ala. 36830, United States. Canadian Journal of Microbiology Vol. 20, No. 2, pp. 125-129 1974.
CODEN: CJMIAZ

AB Language: English.
Cultures of Paramacium caudatum incubated with 7 x 10⁻⁷ M 2 naphthylamine were rapidly **killed** when exposed to light of 366 nm. Cultures not exposed to the amine were unaffected by the light; cultures kept in the dark were unaffected by the amine. Escherichia coli K 12 populations were markedly reduced after irradiation of suspensions in water containing

3 x 10⁻⁴ M 2 naphthylamine with light simulating natural sunlight in intensity and wavelength distribution. Suspensions of **E. coli** in deionized water were unaffected by the light and **E. coli** suspended in solutions of the amine but kept in the dark were also unaffected. Since 2 naphthylamine is a known water pollutant, these results may be of ecological importance.

- L40 ANSWER 15 OF 19 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
75004075 EMBASE Document No.: 1975004075. The immunologic role of the ethanol soluble enterobacterial common antigen versus experimental renal infection. McLaughlin J.C.; Domingue G.J.. Dept. Surg., Sect. Urol., Tulane Univ. Sch. Med., New Orleans, La. 70112, United States. IMMUNOL.COMMUN. Vol. 3, No. 1, pp. 51-75 1974. CODEN: XXXXXB
Language: English.
- AB Members of the Enterobacteriaceae contain a common antigen (CA) which is found in the ethanol soluble fraction (ESF) of heat **killed** culture supernates. The ESF of an **E. coli** 06 strain was shown to be virtually endotoxin free. Preliminary chemical studies revealed that the dry ESF, including salts, contained 20% protein and less than 1% carbohydrate. Chloroform/methanol soluble lipid accounted for approximately 2% of the material. Vaccination of rabbits with such enterobacterial CA elicited protection against renal disease due to retrograde challenge with *Proteus mirabilis* or to hematogenous challenge with **E. coli** 075. Protection was not demonstrated against a heavily encapsulated strain of *Klebsiella pneumoniae* which, as demonstrated by in vitro phagocytosis, was not opsonized by antibody to CA. These results suggest that further investigation of enterobacterial CA as a vaccine is warranted.
- L40 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
1967:516075 Document No. 67:116075 Disinfecting action of 4-(p-dialkylaminophenyl)pyridine derivatives. Kolomoitsev, L. R.; Alfer'eva, M. A.; Matvienko, N. I.; Sheinkman, A. K. (Donetsk. Med. Inst., Donetsk, USSR). Mikrobiologichnii Zhurnal (1934-1977), 29(4), 342-4 (Ukrainian) 1967. CODEN: MZUKAV. ISSN: 0026-3664.
- AB The antibacterial properties of 4-(p-dibutylaminophenyl)pyridine-HCl (I), 4-(p-dimethylaminophenyl)pyridine-MeI (II), and N-(β-hydroxyethyl)-4-(p-dimethylaminophenyl)pyridinium chloride (III) were tested against *Escherichia coli*, *Staphylococcus aureus*, *Bacillus anthracoides*, and *Bact. proteus vulgaris* [*Proteus vulgaris*]. The preps. are yellow crystalline powders, slightly soluble in water, but readily soluble in **alc.** The solns. of the preps. do not decompose when heated to 100°, and do not lose their bactericidal properties. They are only slightly toxic. The preps. were used in concns. of 2, 1, 0.5, and 0.25% in water. Test objects saturated with the bacterial suspensions were seeded on nutritive media containing the preps. studied and observed for 24 hrs. I in 0.25% concentration sterilized the test objects infected with **E. coli**, *S. aureus*, and *B. anthracoides* within 15 min.; *Proteus vulgaris* were more resistant and were **killed** within about 6 hrs. All of the microorganisms were resistant to II and III, and were **killed** only after a longer period of time.
- L40 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN
1957:48410 Document No. 51:48410 Original Reference No. 51:8989a-c Changes caused by injurious agents in the permeability of surviving cells of liver and kidney. Opie, Eugene L. (Rockefeller Inst. Med. Research, New York, NY). Journal of Experimental Medicine, 104, 897-919 (Unavailable) 1956. CODEN: JEMEAV. ISSN: 0022-1007.
- AB cf. C.A. 50, 15808c. Slices of liver and kidney, immersed in oxygenated buffered Krebs-Ringer solution at 38°, were exposed to a variety of

chemical and phys. agents and their permeability (I) measured. I was increased under conditions in which N replaced O, the temperature was raised to 58°, EtOH was added to make a dilution of 1/100-1/5000 (but not 1/20,000), the mol. concentration was raised 2-fold by NaCl, and when one of

the

following was added: CHCl₃, a filtrate of *Escherichia coli* in a final dilution of 1/10,000, somatic antigen of *Shigella paradyserteriae* in a dilution of 1/1000-1/100,000, a suspension of **killed** typhoid bacilli of 1/1000-1/100,000 dilution, and urea in concns. of 0.01-0.1M. I was not increased by the addition of glucose, histamine, diphtheria toxin, or an *E. coli* filtrate of 1/10,000 dilution in the presence of a 2-fold increase in mol. concentration

L40 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

1956:49234 Document No. 50:49234 Original Reference No. 50:9507d-h A comparative biochemical and immunological study of the directed mutability in some bacteria from the intestines. Belozerskii, A. N.; Spirin, A. S.; Kudai, D. G.; Skavronskaya, A. G. (Moscow State Univ.). *Biokhimiya* (Moscow), 20, 686-95 (Unavailable) 1955. CODEN: BIOHQA. ISSN: 0320-9725.

AB Studies were conducted with (1) *Escherichia coli*, strain CM, grown in glucose-free Tyrode medium in the presence of heat-killed *Salmonella paratyphi*; (2) *S. breslau* Number 70; (3) *Alkaligenes* 11-IV-4 which was evolved from *E. coli* CM by culturing the latter in the presence of heat-killed *S. breslau* Number 70; and (4) *S. paratyphi* mutant 12-IV-4 evolved from culturing *Alkaligenes* 11-IV-4 on synthetic medium in the presence of heat-killed *S. breslau* Number 70. All 4 types of bacteria were grown in parallel series on portions of the same batch of the same type of culture medium at 37° for 20 hrs. Growth was washed off with saline, washed again with saline, alcohol and ether, and vacuum dried. The chemical characteristics of the corresponding bacterial masses were established by analyzing them for total N, total P, for purine base N, pentoses, reducing substances (after 4 hrs. hydrolysis with 1 N HCl), for total nucleic acids, deoxyribonucleic acid, ribonucleic acid, protein and polysaccharides. *E. coli* grown on synthetic medium in the presence of heat-killed *S. breslau* Number 70 undergoes basic mutation changes which are reflected in its chemical composition and immunological (antigenic) properties. *Alkaligenes* evolved from *E. coli* acquires a chemical and immunological entity all its own. The new strain which is evolved from the newly developed *Alkaligenes* strain, when again grown in the presence of heat-killed *S. breslau* Number 70 is a paratyphoid type of mutant, the chemical and immunologic characteristics of which are partly those of the original *S. breslau* and partly those of the *Alkaligenes*. The chemo-immunological analysis of the fractions indicated a phylogenetic connection between the experimentally evolved types and the original cultures. The nature of the chemical and immunological changes which had taken place present evidence of the complex structure of the protoplasm of the intestinal microorganisms under study. Among the protein complexes of the bacterial cells are found two specifically distinct components, one labile which changes from one biological form to another within narrow specific ramifications and a protoplasmic component more stable and equally specific within the ramifications of a broader systematic group.

L40 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

1954:18847 Document No. 48:18847 Original Reference No. 48:3458d-f The use of metabolites in the restoration of the viability of heat and chemically inactivated *Escherichia coli*. Heinmets, F.; Taylor, W. W.; Lehman, J. J. (Naval Med. Research Lab., Camp Lejeune, NC). *Journal of Bacteriology*, 67, 5-12 (Unavailable) 1954. CODEN: JOBAAY. ISSN: 0021-9193.

AB Suspensions of *E. coli*, strain B/r, which had apparently been **killed** by the action of heat, C12, zephiran

chloride, alc., or H2O2, were found to contain viable cells when incubated with various metabolites of the tricarboxylic series. When the apparently sterile suspensions were incubated in buffer or in nutrient broth, no viable cells could be demonstrated. The following metabolites were the most effective in producing reactivation: (1) with heat-"killed" cells, Na citrate, lactic acid, and oxalacetic acid; (2) Cl2-"killed" cells, Na citrate, malic acid, and oxalacetic acid; (3) H2O2-"killed" cells, Na citrate, lactic acid, and cis-aconitic acid; (4) zephiran chloride-"killed" cells, Na citrate, lactic acid, cis-aconitic acid, and isocitric acid; (5) alc.-"killed" cells, cis-aconitic acid, α -ketoglutaric acid, and succinic acid. The combination of 11 metabolites produced the highest reactivation. It is probable that such reactivation is concerned with resynthesis of enzymes and re-establishment of cyclic processes. Conventional testing and culturing are not adequate to determine complete sterility.

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L41 0 ALLERGEN EXPRESSING BACTERIA

=> s allergen expressing E coli
L42 0 ALLERGEN EXPRESSING E COLI

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L43 1416 CAPLAN M?/AU

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L44 1 L43 AND MICROBIAL DELIVERY

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L44 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on SIN

AN 2001:676622 CAPLUS

DN 135:225857

TI Microbial delivery system

IN Caplan, Michael

PA Panacea Pharmaceuticals, LLC, USA

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 14

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001066136	A2	20010913	WO 2000-US33121	20001206
	WO 2001066136	A3	20011227		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	CA 2403292	A1	20010913	CA 2000-2403292	20001206
	AU 2001019510	A5	20010917	AU 2001-19510	20001206
	EP 1272213	A2	20030108	EP 2000-982485	20001206
	EP 1272213	B1	20060308		
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			

	JP 2004527450	T	20040909	JP 2001-564788	20001206
	PT 1272213	T	20060630	PT 2000-982485	20001206
	AU 765211	B2	20030911	AU 2001-43769	20010508
PRAI	US 2000-195035P	P	20000406		
	AU 1996-72433	A3	19960923		
	US 2000-731375	A	20001206		
	WO 2000-US33121	W	20001206		

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L46 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
2005:259357 Document No. 142:334946 Recombinant allergens with mutated IgE epitopes for treating anaphylaxis induced by food, venom, drug and latex allergens. **Caplan, Michael J.**; Bottomly, Kim H.; Sosin, Howard B.; Burks, A. Wesley; Sampson, Hugh A. (USA). U.S. Pat. Appl. Publ. US 2005063994 A1 20050324, 117 pp., Cont.-in-part of U.S. Ser. No. 100,303. (English). CODEN: USXXCO. APPLICATION: US 2004-899551 20040726. PRIORITY: US 2000-195035P 20000406; US 2000-731375 20001206; US 2002-100303 20020318.

AB The present invention provides methods and compns. for treating or preventing allergic reactions, particularly anaphylactic reactions. Methods of the present invention involve administering microorganisms to allergic subjects, where the microorganisms contain a recombinant version of the protein allergen. The recombinant version can be wild-type or may include mutations within IgE epitopes of the protein allergen. Preferably the compns. are administered rectally. Particularly preferred microorganisms are bacteria such as **E. coli**. Any allergen may be used in the inventive methods. Particularly preferred allergens are anaphylactic allergens including protein allergens found in foods, venoms, drugs and latex. The inventive compns. and methods are demonstrated in the treatment of peanut-induced anaphylaxis.

L46 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 1
1999394992. PubMed ID: 10464133. Bifidobacterial supplementation reduces the incidence of necrotizing enterocolitis in a neonatal rat model.

Caplan M S; Miller-Catchpole R; Kaup S; Russell T; Lickerman M; Amer M; Xiao Y; Thomson R Jr. (Department of Pediatrics, Northwestern University Medical School, Evanston Hospital, Evanston, Illinois, USA.) Gastroenterology, (1999 Sep) Vol. 117, No. 3, pp. 577-83. Journal code: 0374630. ISSN: 0016-5085. Pub. country: United States. Language: English.
AB BACKGROUND & AIMS: Neonatal necrotizing enterocolitis (NEC) is a devastating gastrointestinal disease of premature infants partly caused by intestinal bacterial proliferation. Because bifidobacteria are thought to reduce the risk for intestinal disturbances associated with pathogenic bacterial colonization, we hypothesized that exogenous bifidobacterial supplementation to newborn rats would result in intestinal colonization and a reduction in the incidence of neonatal NEC. METHODS: Newborn rat pups were given Bifidobacterium infantis (10(9) organisms per animal daily), Escherichia coli, or saline control and exposed to the NEC protocol consisting of formula feeding (Esbilac; 200 cal. kg(-1). day(-1)) and asphyxia (100% N(2) for 50 seconds followed by cold exposure for 10 minutes). Outcome measures included stool and intestinal microbiological evaluation, gross and histological evidence of NEC, plasma endotoxin concentration, intestinal phospholipase A(2) expression, and estimation of

intestinal mucosal permeability. RESULTS: Bifidobacterial supplementation resulted in intestinal colonization by 24 hours and appearance in stool samples by 48 hours. Bifidobacteria-supplemented animals had a significant reduction in the incidence of NEC compared with controls and **E. coli**-treated animals (NEC, 7/24 **B. infantis** vs. 19/27 control vs. 16/23 **E. coli**; $P < 0.01$). Plasma endotoxin and intestinal phospholipase A(2) expression were lower in bifidobacteria-treated pups than in controls, supporting the role of bacterial translocation and activation of the inflammatory cascade in the pathophysiology of NEC. CONCLUSIONS: Intestinal bifidobacterial colonization reduces the risk of NEC in newborn rats.

L46 ANSWER 3 OF 3 MEDLINE on STN DUPLICATE 2
 95073279. PubMed ID: 7982271. Altered mitochondrial redox responses in gram negative septic shock in primates. Simonson S G; Welty-Wolf K; Huang Y T; Griebel J A; **Caplan M S**; Fracica P J; Piantadosi C A. (Department of Medicine, Duke University Medical Center, Durham, NC 27710.) Circulatory shock, (1994 May) Vol. 43, No. 1, pp. 34-43. Journal code: 0414112. ISSN: 0092-6213. Pub. country: United States. Language: English.
 AB Gram negative sepsis causes changes in oxygen supply-demand relationships. We have used a primate model of hyperdynamic gram negative sepsis produced by intravenous infusion of *Escherichia coli* (**E. coli**) to evaluate sepsis-induced alterations in mitochondrial oxidation-reduction (redox) state in muscle in vivo. The redox state of cytochrome a,a3, the terminal member of the intramitochondrial respiratory chain, was assessed in the intact forearm by near-infrared (NIR) spectroscopy. The muscle NIR data were compared to routine measures of oxygen delivery (DO2) and oxygen consumption (VO2). After **E. coli** infusion and fluid resuscitation, DO2 and VO2 showed minimal changes through 24 hr of sepsis. In contrast, changes in cytochrome a,a3 redox state evaluated by NIR occurred within a few hours and were progressive. Mitochondrial functional responses were correlated with structural changes observed on serial muscle biopsies. Gross morphological changes in muscle mitochondria were present in some animals as early as 12 hr, and, in most animals, by 24 hr. The morphologic changes were consistent with decreases in oxidative capacity as suggested by NIR spectroscopy. The NIR data also suggest that two mechanisms are operating to explain abnormalities in oxygen metabolism and mitochondrial function in lethal sepsis. These mechanisms include an early defect in oxygen provision to mitochondria that is followed by a progressive loss in functional cytochrome a,a3 in the muscle.

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	ENTRY	SESSION
FULL ESTIMATED COST	387.36	387.57
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-24.96	-24.96

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PASSWORD:

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NEWS	3	OCT 19	BEILSTEIN updated with new compounds
NEWS	4	NOV 15	Derwent Indian patent publication number format enhanced
NEWS	5	NOV 19	WPIX enhanced with XML display format
NEWS	6	NOV 30	ICSD reloaded with enhancements
NEWS	7	DEC 04	LINPADOCDB now available on STN
NEWS	8	DEC 14	BEILSTEIN pricing structure to change
NEWS	9	DEC 17	USPATOLD added to additional database clusters
NEWS	10	DEC 17	IMSDRUGCONF removed from database clusters and STN
NEWS	11	DEC 17	DGENE now includes more than 10 million sequences
NEWS	12	DEC 17	TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment
NEWS	13	DEC 17	MEDLINE and LMEDELINE updated with 2008 MeSH vocabulary
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NEWS	15	DEC 17	STN Viewer enhanced with full-text patent content from USPATOLD
NEWS	16	JAN 02	STN pricing information for 2008 now available
NEWS	17	JAN 16	CAS patent coverage enhanced to include exemplified prophetic substances
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L6 ANSWER 1 OF 12 MEDLINE on STN

95046935. PubMed ID: 7958476. Mucosal vaccines based on the use of cholera toxin B subunit as immunogen and **antigen carrier**. Lebens M; Holmgren J. (Department of Medical Microbiology and Immunology, University of Goteborg, Sweden.) Developments in biological standardization, (1994) Vol. 82, pp. 215-27. Ref: 39. Journal code: 0427140. ISSN: 0301-5149. Pub. country: Switzerland. Language: English.

AB Stimulation of strong mucosal IgA immune responses as a basis for vaccine-induced protection against various pathogens has proved difficult. Most soluble protein antigens administered either parenterally or oral-mucosally have given disappointing results. A notable exception in this regard are cholera toxin (CT) and, particularly in humans, its non-toxic B subunit pentamer moiety (CTB) both of which stimulate a strong intestinal IgA antibody response and long-lasting immunological memory. Based on this, CTB has become an important component in recently developed oral vaccines against cholera and diarrhea caused by enterotoxigenic **E. coli**. The strong immunogenicity of CT and CTB can to a large extent be explained by their ability to bind to receptors on the intestinal mucosal surface. This has promoted much recent interest in the use of CTB as an oral delivery carrier for other vaccine-relevant antigens. Oral administration of antigens coupled to CTB either chemically or genetically has in several systems been found to markedly potentiate both intestinal and extra-intestinal IgA immune responses against the CTB-coupled antigens and to elicit substantial circulating antibody responses. In contrast to CTB, CT also has strong adjuvant properties for stimulating mucosal IgA immune responses to unrelated, non-coupled antigens after oral co-immunization. This adjuvant activity appears to be closely linked to the A subunit-catalyzed ADP-ribosylating action of CT leading to enhanced cyclic AMP formation in the affected cells.

L6 ANSWER 2 OF 12 MEDLINE on STN

93254204. PubMed ID: 1302285. Extracellular export of Shiga toxin B-subunit/haemolysin A (C-terminus) fusion protein expressed in Salmonella typhimurium aroA-mutant and stimulation of B-subunit specific antibody responses in mice. Su G F; Brahmabhatt H N; de Lorenzo V; Wehland J; Timmis K N. (Department of Microbiology, GBF-National Research Centre for Biotechnology, Braunschweig, Germany.) Microbial pathogenesis, (1992 Dec) Vol. 13, No. 6, pp. 465-76. Journal code: 8606191. ISSN: 0882-4010. Pub. country: ENGLAND: United Kingdom. Language: English.

AB The Shiga toxin B-subunit has been fused to the 23-kD C-terminus of Escherichia coli haemolysin A (HlyA) and exported from attenuated **antigen carrier** strain of Salmonella typhimurium aroA (SL3261). The expression of the gene fusion under the control of a synthetic modified beta-lactamase promoter (constitutive expression) and under the iron-regulated aerobactin promoter showed that the fusion protein could be stably expressed and exported out of the bacterial cell in significant amounts so long as high copy number plasmids were not used. Oral and i.p. immunization of mice with the hybrid salmonellae resulted in significant B-subunit specific mucosal and serum antibody responses. A comparative analysis of the location of hybrid proteins in the **antigen carrier** bacterial cell (i.e. cytoplasmic

expression and extracellular export) has shown that both modes of expression result in antigen-specific immune responses. This is the first report demonstrating that foreign polypeptides fused to the 23-kD C-terminus of *E. coli* haemolysin A can be exported from attenuated *Salmonella* vaccine strains and that such exported polypeptides can result in antigen-specific immune responses.

L6 ANSWER 3 OF 12 MEDLINE on STN
91100317. PubMed ID: 1987133. Expression of the cloned *Escherichia coli* O9 rfb gene in various mutant strains of *Salmonella typhimurium*. Sugiyama T; Kido N; Komatsu T; Ohta M; Kato N. (Department of Bacteriology, Nagoya University School of Medicine, Aichi, Japan.) *Journal of bacteriology*, (1991 Jan) Vol. 173, No. 1, pp. 55-8. Journal code: 2985120R. ISSN: 0021-9193. Pub. country: United States. Language: English.

AB To investigate the effect of chromosomal mutation on the synthesis of rfe-dependent *Escherichia coli* O9 lipopolysaccharide (LPS), the cloned *E. coli* O9 rfb gene was introduced into *Salmonella typhimurium* strains defective in various genes involved in the synthesis of LPS. When *E. coli* O9 rfb was introduced into *S. typhimurium* strains possessing defects in rfb or rfc, they synthesized *E. coli* O9 LPS on their cell surfaces. The rfe-defective mutant of *S. typhimurium* synthesized only very small amounts of *E. coli* O9 LPS after the introduction of *E. coli* O9 rfb. These results confirmed the widely accepted idea that the biosynthesis of *E. coli* O9-specific polysaccharide does not require rfc but requires rfe. By using an rfbT mutant of the *E. coli* O9 rfb gene, the mechanism of transfer of the synthesized *E. coli* O9-specific polysaccharide from antigen carrier lipid to the R-core of *S. typhimurium* was investigated. The rfbT mutant of the *E. coli* O9 rfb gene failed to direct the synthesis of *E. coli* O9 LPS in the rfc mutant strain of *S. typhimurium*, in which rfaL and rfbT functions are intact, but directed the synthesis of the precursor. Because the intact *E. coli* O9 rfb gene directed the synthesis of *E. coli* O9 LPS in the same strain, it was suggested that the rfaL product of *S. typhimurium* and rfbT product of *E. coli* O9 cooperate to synthesize *E. coli* O9 LPS in *S. typhimurium*.

L6 ANSWER 4 OF 12 MEDLINE on STN
90198517. PubMed ID: 2576522. Oral vaccination of rats with live avirulent *Salmonella* derivatives expressing adhesive fimbrial antigens of uropathogenic *Escherichia coli*. Schmidt G; Hacker J; Wood G; Marre R. (Forschungsinstitut Borstel, F.R.G.) *FEMS microbiology immunology*, (1989 Mar) Vol. 1, No. 4, pp. 229-35. Journal code: 8901230. ISSN: 0920-8534. Pub. country: Netherlands. Language: English.

AB The avirulent *Salmonella typhimurium* F885 was transformed with a plasmid carrying the cloned *S. fimbriae* genes of a uropathogenic *Escherichia coli*. The resulting transformant (F885-1) produced efficiently *E. coli* *S. fimbriae* and was used for live oral vaccination of rats. For comparison rats were immunized subcutaneously with isolated *S. fimbriae*. Both routes of vaccination resulted in a significant IgG antibody response to *S. fimbriae*. In addition live oral vaccination induced a serum IgA response against *S. fimbriae*. After transurethral infection of rats with a *S. fimbriae* producing *E. coli* a 10-fold reduction of bacterial counts in the kidney was observed in rats orally vaccinated with F885-1 as compared to unvaccinated controls. This study suggests that the avirulent *Salmonella* F885 may be used as a fimbrial antigen carrier for oral vaccination against renal infections.

L6 ANSWER 5 OF 12 MEDLINE on STN

76033569. PubMed ID: 1101370. Antibody production by human colostrual cells. I. Immunoglobulin class, specificity, and quantity. Ahlstedt S; Carlsson B; Hansson L A; Goldblum R M. Scandinavian Journal of Immunology, (1975 Sep) Vol. 4, No. 5-6, pp. 535-9. Journal code: 0323767. ISSN: 0300-9475. Pub. country: Norway. Language: English.
- AB The production of antibody by human colostrual cells was assayed by the hemolysis in-gel technique. When sheep erythrocytes coated with O antigens from frequently encountered *Escherichia coli* bacteria were used as detector cells and anti-IgA serum was added for development, numerous plaque-forming cells (PFC) were demonstrated in all samples tested. In contrast, plaques were rarely seen in the presence of anti-IgG developing serum. The direct (IgM) plaques occasionally noted with both antigen-coated and uncoated sheep erythrocytes were mainly due to the production of heterophil antibodies, since they were not formed when human erythrocytes were used as O-antigen carriers. A strikingly high number of the colostrual lymphocytes formed antibodies to the *E. coli* antigens, up to 8%. This suggests that these cells represent a rather selective population--possibly cells from the gastrointestinal tract exposed to enteric bacteria. The large number of plaques observed, the predominance of the cells forming IgA antibodies, and the marked changes in PFC number in relationship to parturition pose a number of questions relevant to the antibody-producing colostrum cells and their relationship to the secretory immune system.
- L6 ANSWER 6 OF 12 EMBASE COPYRIGHT (c) 2008 Elsevier B.V. All rights reserved on STN
- 1989062675 EMBASE Oral vaccination of rats with live avirulent *Salmonella* derivatives expressing adhesive fimbrial antigens of uropathogenic *Escherichia coli*. Schmidt, G.; Hacker, J.; Wood, G.; Marre, R.. Forschungsinstitut Borstel, 2061 Borstel, Germany. FEMS Microbiology Immunology Vol. 47, No. 4, pp. 229-235 1989. ISSN: 0920-8534. CODEN: FMIMEH Pub. Country: Netherlands. Language: English. Summary Language: English. Entered STN: 911212. Last Updated on STN: 911212
- AB The avirulent *Salmonella typhimurium* F885 was transformed with a plasmid carrying the cloned S fimbriae genes of a uropathogenic *Escherichia coli*. The resulting transformant (F885-1) produced efficiently *E. coli* S fimbriae and was used for live oral vaccination of rats. For comparison rats were immunized subcutaneously with isolated S fimbriae. Both routes of vaccination resulted in a significant IgG antibody response to S fimbriae. In addition live oral vaccination induced a serum IgA response against S fimbriae. After transurethral infection of rats with a S fimbriae producing *E. coli* a 10-fold reduction of bacterial counts in the kidney was observed in rats orally vaccinated with F885-1 as compared to unvaccinated controls. This study suggests that the avirulent *Salmonella* F885 may be used as a fimbrial antigen carrier for oral vaccination against renal infections.
- L6 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2008 ACS on STN
- 1999:761959 Document No. 132:45567 Expression of CS3 from enterotoxigenic *Escherichia coli* in *Shigella flexneri* 2a and immunogenicity of the recombinant strain. Han, Zhaozhong; Ying, Tianyi; Cao, Yong; Rui, Xianliang; Zhang, Zhaoashan; Su, Guofu; Huang, Cuifen (Beijing Institute of Biotechnology, Beijing, 100071, Peop. Rep. China). Zhongguo Shengwu Huaxue Yu Fenzi Shengwu Xuebao, 15(5), 719-723 (Chinese) 1999. CODEN: ZSHXF2. ISSN: 1007-7626. Publisher: Zhongguo Shengwu Huaxue Yu Fenzi Shengwu Xuebao Bianweihui.
- AB A host-plasmid balancing system was established based on *asd* gene in a candidate vaccine strain(T32) of *Shigella flexneri* 2a. *Asd* gene of T32 was amplified by polymerase chain reaction(PCR), and its structural gene

fragment was replaced by human interleukin 2 gene. The mutated asd gene was introduced to T32 genome by homologous recombination. The resulted bacteria strain (FaD) was used as **antigen carrier** to express *Escherichia coli* surface antigen CS3 of enterotoxigenic **E. coli**, which was expressed on a complementary plasmid carrying asd gene from *Streptococcus mutans*. The plasmid could stably be maintained and expressed CS3 in the host cell without any antibiotic selection. Antibodies against CS3 could be detected in sera of mice immunized with recombinant bacteria either orally or s.c., and mice immunized by either route could be protected from challenging with virulent strain of the same serotype. All results indicate that the recombinant constructed can be used as bi-valent vaccine candidate for prevention of bacterial diarrhea.

L6 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2008 ACS on STN

1997:719672 Document No. 128:21852 Immunogenic carrier system against gonadotropin releasing hormone (GnRH). Van Der Zee, Anna; Van Die, Irma; Marianne; Hoekstra, Willem Pieter Martin; Gielen, Josephus Theodorus (Akzo Nobel N.V., Neth.). U.S. US 5684145 A **19971104**, 28 pp., Division of U.S. Ser. No. 78,661, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1995-453588 19950530. PRIORITY: NL 1992-1775 19920618; US 1993-78661 19930616.

AB The present invention is concerned with vaccination of mammals against GnRH. The vaccine comprises a GnRH peptide conjugate to **E. coli** fimbrial-filaments and elicits an immune response against GnRH.

L6 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2008 ACS on STN

1996:123718 Document No. 124:173426 Peptides used as carriers in immunogenic constructs suitable for development of synthetic vaccines. Cohen, Irun R.; Fridkin, Matityahu; Konen-Waisman, Stephanie (Yeda Research and Development Co., Ltd., Israel). PCT Int. Appl. WO 9531994 A1 **19951130**, 32 pp. DESIGNATED STATES: W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IS, JP, KE, KG, KR, KZ, LK, LR, LT, LV, MD, MG, MN, MW, MX, NO, NZ, PL, RO, RU, SD, SG, SI, SK, TJ, TM, TT, UA, US, UZ, VN; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1995-US6575 19950524. PRIORITY: IL 1994-109790 19940525.

AB The invention relates to conjugates of poorly immunogenic antigens, e.g., peptides, proteins and polysaccharides, with a synthetic peptide carrier constituting a T cell epitope derived from the sequence of **E. coli** hsp65 (GroEL), or an analog thereof, said peptide or analog being capable of increasing substantially the immunogenicity of the poorly immunogenic antigen. A suitable peptide according to the invention is Pep287e, which corresponds to positions 437-453 of the **E. coli** hsp65 mol. In example, Pep287e was synthesized and conjugated with *Citrobacter freundii*-derived/protein and nucleic acid and polysaccharide-containing Vi fragment for use as immunogen to stimulate lymph node proliferation.

L6 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2008 ACS on STN

1992:468120 Document No. 117:68120 Safety, immunogenicity, and efficacy in monkeys and humans of invasive *Escherichia coli* K-12 hybrid vaccine candidates expressing *Shigella flexneri* 2a somatic antigen. Kotloff, Karen L.; Herrington, Deirdre A.; Hale, Thomas L.; Newland, John W.; Van de Verg, Lillian; Cogan, John P.; Snoy, Phillip J.; Sadoff, Jerald C.; FORMAL, Samuel B.; Levine, Myron M. (Sch. Med., Univ. Maryland, Baltimore, MD, 21201, USA). Infection and Immunity, 60(6), 2218-24 (English) **1992**. CODEN: INFIBR. ISSN: 0019-9567.

AB A live, oral *Shigella* vaccine, constructed by transfer of the 140-MDa invasiveness plasmid from *S. flexneri* 5 and the chromosomal genes encoding

the group- and type-specific O antigen of *S. flexneri* 2a to **E. coli** K-12, was tested in humans. Designated EcSf2a-1, this vaccine produced adverse reactions (fever, diarrhea, or dysentery) in 4 (31%) of 13 subjects who ingested a single dose of $1.0 + 10^9$ CFU, while at better-tolerated doses ($5.0 + 10^6$ to $5.0 + 10^7$ CFU), it provided no protection against challenge with *S. flexneri* 2a. A further-attenuated aroD mutant derivative, EcSf2a-2, was then tested. Rhesus monkeys that received EcSf2a-2 in 3 oral doses of $1.5 + 10^{11}$ CFU experienced no increase in gastrointestinal symptoms compared with a control group that received an **E. coli** K-12 placebo. Compared with controls, the vaccinated monkeys were protected against shigellosis after challenge with *S. flexneri* 2a (60% efficacy). In humans, EcSf2a-2 was well tolerated at inocula ranging from $5.0 + 10^6$ to $2.1 + 10^9$ CFU. However, after a single dose of $2.5 + 10^9$ CFU, 4 (17%) of 23 subjects experienced adverse reactions, including fever (3 subjects) and diarrhea (1 subject), and after a single dose of $1.8 + 10^{10}$ CFU, 2 of 4 subjects developed dysentery. Recipients of 3 doses of $1.2-2.5 + 10^9$ CFU had significant rises in serum antibody to lipopolysaccharide (61%) and invasiveness plasmid antigens (44%) and in gut-derived IgA antibody-secreting cells specific for lipopolysaccharide (100%) and invasiveness plasmid antigens (60%). Despite its immunogenicity, the vaccine conferred only 36% protection against illness (fever, diarrhea, or dysentery) induced by exptl. challenge. These findings illustrate the use of an epithelial cell-invasive **E. coli** strain as a carrier for Shigella antigens.

L6 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2008 ACS on STN

1992:405863 Document No. 117:5863 Regulation of the immune response to hepatitis B virus and human serum albumin. III. Induction of anti-albumin antibody secretion in vitro by C-gene-derived proteins in peripheral B cells from chronic carriers of HBsAg. Hellstroem, U. B.; Sylvan, S. P. E. (Dep. Infect. Dis., Karolinska Inst., Stockholm, S-11489, Swed.). Scandinavian Journal of Immunology, 35(1), 53-62 (English) 1992. CODEN: SJIMAX. ISSN: 0300-9475.

AB The circulatory pool of B cells from the majority (11/13) of chronic hepatitis B surface antigen (HBsAg) carriers contained sensitized B cells with the capacity to secrete IgG antibodies with specificity for human serum albumin (HSA), when stimulated with **E. coli** -derived core protein at low concns. in vitro. The IgG anti-HSA secretion was dependent upon and regulated by T cells, and optimal secretion was obtained at T/B-cell ratios of 1.0-4.0, varying for different individuals. The level of anti-HSB secretion was higher for patients with on-going viral replication as assessed by hepatitis B virus (HBV)-DNA in serum. Culture supernatants containing anti-HSA antibodies also contained anti-HBc antibodies, as detected by ELISA where the solid phase was charged with **E. coli**-derived core protein, or the synthetic peptides corresponding to the 75-84 and 132-147 sequences in the C region of HBV. In contrast, IgG anti-HBc (**E. coli**-derived), but not anti-HSA or anti-HBc 75-84, 132-147 antibodies, were detected at similar T/B-cell ratios in cell cultures from 5/6 individuals with naturally acquired immunity to hepatitis B. Thus, peripheral B cells from the majority of HB-immune donors are sensitized to unique (e.g. non-albumin associated) structures in the nucleocapsid of HBV, while B cells in the majority of chronic HBsAg carriers are sensitized to linear C-gene-derived structures in association with the host self-component HSA.

L6 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2008 ACS on STN

1990:476015 Document No. 113:76015 Outer membrane PhoE protein of *Escherichia coli* as a carrier for foreign antigenic determinants: immunogenicity of epitopes of foot-and-mouth disease virus. Agerberg, Marja; Adriaanse, Henriette; Lankhof, Hanneke; Molen, Rob; Tommassen, Jan (Inst. Mol. Biol. Med. Biotechnol., Univ. Utrecht, Utrecht, 3584-CH,

Neth.). Vaccine, 8(1), 85-91 (English) 1990. CODEN: VACCDE.
ISSN: 0264-410X.

AB Outer membrane protein PhoE of *E. coli* was used for the expression of antigenic determinants of foot-and-mouth disease virus. Five hybrid PhoE proteins were constructed containing different combinations of 2 antigenic determinants of VP1 protein of the virus. The hybrid proteins were expressed in 2 *E. coli* strains and the proteins were correctly assembled into the outer membrane. The inserted epitopes were exposed at the surface of the cell and were antigenic in this PhoE-associated conformation. Immunization expts., performed with partially purified protein, resulted in all cases in a significant anti-peptide antibody titer. In one case in which the hybrid protein with the largest insert was used, a neutralizing antibody response was detected.

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L8 ANSWER 1 OF 8 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on SIN
2007:576104 Document No.: PREV200700573458. Novel recombinant interleukin-13 peptide-based vaccine reduces airway allergic inflammatory responses in mice. Ma, Yanbing; HayGlass, Kent T.; Becker, Allan B.; Fan, Yijun; Yang, Xi; Basu, Sujata; Srinivasan, Ganesh; Estelle, F.; Simons, R.; Halayko, Andrew J.; Peng, Zhikang [Reprint Author]. Univ Manitoba, Dept Pediat and Child Hlth, 715 McDermot Ave, Winnipeg, MB R3E 3P4, Canada. zpeng@ms.umanitoba.ca. American Journal of Respiratory and Critical Care Medicine, (SEP 1 2007) Vol. 176, No. 5, pp. 439-445. ISSN: 1073-449X. Language: English.

AB Rationale: Interleukin (IL)-13 plays a pivotal role in the pathogenesis of allergic asthma. Passive administration of its monoclonal antibody or soluble receptor to block overproduced IL-13 has been proven to be effective in controlling airway allergic responses in animal models, but these approaches have disadvantages of short half-lives, high costs, and possible adverse effects.Objectives: We sought to develop a novel therapeutic strategy through constructing an IL-13 peptide-based vaccine for blocking IL-13 on a persistent effect basis and to evaluate its in vivo effects using a murine model.Methods: To break self-tolerance, truncated hepatitis B core antigen was used as a carrier. Vaccine was prepared by inserting a peptide derived from the receptor binding site of mouse IL-13 into the immunodominant epitope region of the carrier using gene recombination methods. Mice received vaccine subcutaneously three times, and then subjected to intraperitoneal sensitization and intranasal challenge with ovalbumin. Control animals received carrier or saline in place of vaccine.Measurements and Main Results: The vaccine presented as virus-like particles and induced sustained and high titered IL-13-specific IgG without the use of conventional adjuvant. Vaccination significantly suppressed ovalbumin-induced inflammatory cell number, and IL-13 and IL-5 levels in bronchoalveolar lavage fluids. Serum total and ovalbumin-specific IgE were also significantly inhibited. Moreover, allergen-induced goblet cell hyperplasia, lung tissue inflammatory cell infiltration, and pulmonary hyperresponsiveness to inhaled methacholine were significantly suppressed in vaccinated mice.Conclusions: Our data indicate that IL-13 peptide-based vaccines could be an effective therapeutic approach in the treatment of asthma.

L8 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2008 ACS on STN

2006:169866 Document No. 144:187529 Carrier for carrying out functional tests on biological cells and method for coating said carrier. Steuer, Heiko; Templin, Markus; Kanzok, Britta; Kuschel, Cornelia; Angres, Brigitte (NMI Naturwissenschaftliches und Medizinisches Institut An der Universitaet Tuebingen, Germany). PCT Int. Appl. WO 2006/018072 A1 20060223, 42 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IS, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (German). CODEN: PIXXD2. APPLICATION: WO 2005-EP7334 20050707. PRIORITY: DE 2004-102004039628 20040810.

AB The invention relates to a method for coating a carrier for carrying out functional tests on biol. cells, to a carrier for carrying out functional tests on biol. cells and to the use of corresponding carriers for carrying out said tests. The process involves (a) the coating of a carrier plate with a hydrogen-bridge donor and/or at least a polycationic substance; (b) applying onto the first layer a hydrogen-bridge acceptor and/or at least a polyanion; (c) immobilizing biomols. and test substances onto the coated layer; (d) incubation with a protein solution; (e) immobilization of cells onto the pretreated carrier. The carrier is glass, plastics, especially polystyrene and/or silicone. Layer (a) is selected from the group of poly-L-lysine, poly-D-lysine, polyamide, aminosilane or their derivs. Layer (b) is nitrocellulose that is applied from a methanolic solution by dipping or spraying. Proteins, especially extracellular matrix proteins, carbohydrates, glycosaminoglycans, proteoglycans, and lipids are the immobilized biomols. Test substances are antibodies, drugs, messenger mols., growth factors, antigens, and **allergens**. Test substances are applied by impact or nonimpact printing using a printing buffer with trehalose.

L8 ANSWER 3 OF 8 MEDLINE on STN

DUPLICATE 1

2005156208. PubMed ID: 15787872. Why Chlamydia pneumoniae is associated with asthma and other chronic conditions? Suggestions from a survey in unselected 9 yr old schoolchildren. Ronchetti Roberto; Biscione Gian Luca; Ronchetti Francesco; Ronchetti Maria Paola; Martella Susy; Falasca Carlo; Casini Carolina; Barreto Mario; Villa Maria Pia. (Pediatric Clinic, Second School of Medicine, Sant'Andrea Hospital, University La Sapienza, Rome, Italy.. ronchetti@uniroma1.it) . Pediatric allergy and immunology : official publication of the European Society of Pediatric Allergy and Immunology, (2005 Mar) Vol. 16, No. 2, pp. 145-50. Journal code: 9106718. ISSN: 0905-6157. Pub. country: England; United Kingdom. Language: English.

AB Despite numerous studies demonstrating an association between asthma and many other chronic conditions and signs of Chlamydia pneumoniae (Cp) infection, the role of Cp in the pathogenesis of these illness remain still unclear. We investigated the prevalence of Cp antigen in the upper airways and the prevalence of detectable Cp serum antibodies in an unselected population of 207 9-yr-old schoolchildren. We also sought the presence of asthma, chronic or recurrent respiratory symptoms by means of questionnaire completed by the parents. Nasal aspirate, blood sampling and **allergen** skin prick tests were also performed. None of the children had obvious signs of acute infection at physical examination. Cp DNA was detected in nasal aspirates from 20 of the 207 children tested and serum IgG antibodies for Cp in 68 children. No association was found between atopy or history of atopic illness and the presence of Cp DNA or antibody production. This finding is explained by the fact that our study was conducted in an unselected childhood population, inherently including few children with asthma. A strong association between the status of

antigen carrier and the presence of detectable Cp serum immunoglobulin (Ig)G or IgM suggests that subjects with detectable Cp antibodies have an impaired ability to eliminate this pathogen when infected. Because Cp eradication requires a strong Th1 lymphocyte response, the previously proven association between Cp and asthma, might reflect the known association of asthma with Th2-oriented lymphocytic activity.

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L8 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2008 ACS on STN

1992:632030 Document No. 117:232030 Suppression of immune responses with oligomeric forms of antigen of controlled chemistry. Dintzis, Howard M.; Dintzis, Renee Z.; Blodgett, James K.; Cheronis, John C.; Kirschenheuter, Gary (Johns Hopkins University, USA). PCT Int. Appl. WO 9211029 A1 19920709, 230 pp. DESIGNATED STATES: W: AU, CA, JP, KR; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1991-US9176 19911217. PRIORITY: US 1990-628858 19901217.

AB A method is provided of specifically suppressing an undesired immune response in a mammal suffering from such a response. The method comprises (1) preparing a construct comprising ≥ 1 discrete antigenically recognizable moiety (corresponding to a determinant of an antigen causing the undesired immune response) bound to a pharmacol. acceptable carrier, wherein the number of moieties bound to the carrier and the spacing of the moieties on the carrier are such that the construct does not elicit an immune response to the moieties but does directly compete with the antigen for receptors on an immunocompetent cell that recognizes the determinant, the construct thereby specifically suppressing the undesired immune response; and (2) administration of the construct to the mammal in an effective amount. Also disclosed are methods for preparing the constructs (scaffold synthesis, conjugate preparation, etc.). A conjugate of dextran with a peptide derivative of a histone H2B amino-terminal fragment was prepared. Anti-histone antibody titers in mice that received the suppressive conjugate were suppressed to background levels, while animals receiving control conjugates showed no significant changes (or, in many cases, actual increases) in their anti-histone antibody levels. Animals treated with immunosuppressive conjugate had no detectable cells actively secreting anti-histone antibodies, while control animals had a population of anti-histone antibody-secreting cells too numerous to quantitate. Immunogenicity of a variety of other constructs (e.g. fluoresceinated polymers, benzoylpenicillin conjugate with albumin or with ovalbumin) was examined

L8 ANSWER 5 OF 8 MEDLINE on STN DUPLICATE 2

90187904. PubMed ID: 2138201. A method to generate antigen-specific suppressor T cells in vitro from peripheral blood T cells of honey bee venom-sensitive, allergic patients. Carini C; Iwata M; Warner J; Ishizaka K. (Department of Medicine, Johns Hopkins University School of Medicine, Good Samaritan Hospital, Baltimore, MD 21239.) Journal of immunological methods, (1990 Mar 9) Vol. 127, No. 2, pp. 221-33. Journal code: 1305440. ISSN: 0022-1759. Pub. country: Netherlands. Language: English.

AB Peripheral blood mononuclear cells of patients allergic to honey bee venom were stimulated with denatured bee venom phospholipase A2, and the antigen-activated T cells were propagated for 4 days by human IL-2 in the presence or absence of recombinant human lipocortin I. Upon antigenic stimulation with the denatured phospholipase A2 and autologous monocytes or by cross-linking of CD3 by anti-CD3 antibody, the activated T cells, which had propagated by IL-2 alone, formed N-glycosylated IgE-binding factors and glycosylation enhancing factor (GEF), while those propagated in the presence of lipocortin formed unglycosylated IgE-binding factors and glycosylation inhibiting factor (GIF). The GEF and GIF formed by the antigen- or anti-CD3-stimulated T cells had affinity for bee venom phospholipase A2 and could be purified by using anti-lipomodulin

Sephadex. In the mouse lymphocyte system, the major cell source of GIF is antigen-specific suppressor T cells, and the antigen-binding GIF from the cells suppressed the in vivo antibody response in an **antigen (carrier)**-specific manner. In view of the findings in the mouse system, the present results may provide an immunological maneuver to generate **allergen**-specific suppressor T cells, and to obtain **allergen**-specific suppressor factor from T cell populations in the peripheral blood of allergic patients.

L8 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2008 ACS on STN

1987:38519 Document No. 106:38519 Original Reference No. 106:6356h,6357a Preparation for the specific modification of the humoral or cellular immune reaction. Theurer, Karl (Fed. Rep. Ger.). Ger. Offen. DE 3513572 A1 19861016, 17 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1985-3513572 19850416.

AB Title preps. used as carriers to the immune cells, natural soluble antigens, haptens and **allergens**, or biomimetically-active antiidiotypic antibodies (European Patent 85102586.6) or sep. or conjugate antideterminant fragments thereof. The carriers can be used for immunosuppression or generation of immuno-tolerance by selective binding of cytotoxic, antimetabolic or alkylating agents, folic acid antagonists, dimeric alkaloids, radionuclides, antihistaminics, etc. The carriers can also be used for specific stimulation of the immune system by selective binding of juvenile lymph node, thymus, bone marrow or spleen exts., informative RNAs for antibody formation, etc. Preps. obtained with this carrier can be used for treatment of multiple sclerosis, myasthenia gravis, post-transplant tissue rejection, etc. Thus, a preparation for the specific immunosuppression of humoral or cellular autoimmunization in multiple sclerosis uses as a carrier encephalogenic protein (Kibler, R. F. and Shapira, R., 1968) and myelin from the peripheral nervous system. Protein synthesis-inhibiting agents (erythromycin, chloramphenicol) are adsorbed or bound to the above carrier.

L8 ANSWER 7 OF 8 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

1985:339407 Document No.: PREV198580009399; BA80:9399. ENZYME IMMUNOASSAY USING POLYSTYRENE BEADS IN THE DIAGNOSIS OF JAPANESE CEDAR POLLINOSIS. MATSUI S [reprint author]; NAKAZAWA T; INAZAWA M; UMEGAE Y; KOBAYASHI S; KOCHIBI N; SATO K. FIRST DEP OF INTERNAL MEDICINE, SCHOOL OF MEDICINE, GUNMA UNIVERSITY. Japanese Journal of Allergology, (1985) Vol. 34, No. 1, pp. 6-14.

CODEN: ARERAM. ISSN: 0021-4884. Language: JAPANESE.

AB An enzyme immunoassay (EIA) using polystyrene beads as an **antigen carrier** and β -D-galactosidase as the enzyme marker was developed for measuring specific IgE antibodies semiquantitatively in Japanese cedar pollinosis. Polystyrene beads can be well coated with the **allergen** extract from Japanese cedar pollen; $\geq 50 \mu\text{g}$ protein/ml of **allergen** is needed for the coating. Reproducibility of this method is acceptable because there was little difference in the results from each bead. Specific IgE antibody levels measured by this method correlated well with those by the radioallergosorbent test (RAST) using paper discs. Inhibition tests using antigen-coated beads and absorbed sera with various kinds of antigens showed that this method is also useful in the detection of activities of fractionated antigens. These results suggest that EIA using polystyrene beads is of value, in place of RAST, in isolation studies of **allergen** as well as in the diagnosis of Japanese cedar pollinosis.

L8 ANSWER 8 OF 8 MEDLINE on STN

DUPLICATE 3

83292513. PubMed ID: 6604105. A nylon ball solid-phase radioimmunoassay for specific antibodies in human sera. Application to measurement of IgG antibodies to pollen **allergens**. Djurup R; Sondergaard I; Minuva

U; Weeke B. Journal of immunological methods, (1983 Sep 16) Vol. 62, No. 3, pp. 283-96. Journal code: 1305440. ISSN: 0022-1759. Pub. country: Netherlands. Language: English.

- AB The principle of the radioallergosorbent test (RAST) has been used to measure IgG antibodies to timothy grass pollen **allergens** in sera from desensitized allergic subjects. 125I-labeled goat anti-human IgG was used as detector protein. Non-specific binding was eliminated by use of a non-porous nylon ball an **antigen carrier** and by use of a special buffer with high ionic strength and pH, containing 1% bovine gamma globulin and 5% normal rabbit serum as 'balance proteins'. At dilution 1:80 non-specific binding was only 0.28% and the binding ratio for a high-liter serum was about 10. By inhibition experiments the assay was demonstrated to be specific for IgG antibodies to timothy grass pollen. The results obtained with this assay correlated statistically significantly with those found th a double -antibody method (rs equal 0.68, n equal 20, t equal 3.93, P less than 0.001). Serum dilution curves were parallel, indicating that the assay is in **allergen** excess. The within-assay coefficient of variation ranged from 3.9 to 7.6%; the between-assay coefficient of variation from 8.4 to 19.5%. The assay is very simple to perform, requiring no centrifugation. The **allergen** -coated balls are stable for at least 3 months. The assay should be applicable to measurement of IgG antibodies and IgG subclass antibodies to any protein antigen of interest.

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=> s antigen delivery
L9      3031 ANTIGEN DELIVERY
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=> s l9 and "E Coli"
L10     89 L9 AND "E COLI"
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=> s l10 and killed
L11     5 L10 AND KILLED
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=> dup remove l11
PROCESSING COMPLETED FOR L11
L12     3 DUP REMOVE L11 (2 DUPLICATES REMOVED)
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=> d l12 1-3 cbib abs
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L12 ANSWER 1 OF 3 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN 2003:530572 Document No.: PREV200300533511. Delivery of antigens to the cytosol of nonprofessional phagocytic cells using invasive Escherichia coli K-12 expressing listeriolysin O. Pratt, J. T. [Reprint Author]; Higgins, D. E. [Reprint Author]. Harvard Medical School, Boston, MA, USA. Abstracts of the General Meeting of the American Society for Microbiology, (2003) Vol. 103, pp. E-109. <http://www.asmsa.org/mtgsrc/generalmeeting.htm>. m. cd-rom.

Meeting Info.: 103rd American Society for Microbiology General Meeting. Washington, DC, USA. May 18-22, 2003. American Society for Microbiology. ISSN: 1060-2011 (ISSN print). Language: English.

- AB Bacterial-based vectors can be used as vehicles for delivery of proteins to eukaryotic host cells. The use of these vectors provides a distinct advantage because any protein that can be expressed by the bacteria can potentially be delivered without purification. It has previously been shown that Escherichia coli expressing cytoplasmic recombinant listeriolysin O (LLO) can deliver antigenic protein to the cytosol of macrophages for processing and presentation through the MHC class I pathway. LLO is a pore-forming cytolytic and an essential pathogenic determinant of Listeria monocytogenes. However, the **E. coli**/LLO delivery system has been limited to use in professional phagocytic cells (macrophages and dendritic cells). Therefore, we have

modified the *E. coli*/LLO system to expand the delivery targets to nonprofessional phagocytic cells using an invasive strain of *E. coli*. We co-expressed LLO and invasins, an outer membrane protein from *Yersinia pseudotuberculosis* that mediates bacterial invasion through binding of host cell beta1 integrins, in an *E. coli* strain auxotrophic for peptidoglycan synthesis. Consequently, the *E. coli* induce phagocytosis through invasins-beta1 integrin interactions. Once inside the phagosome, bacteria undergo spontaneous lysis, releasing LLO and target proteins into the phagosome. Subsequent perforation of the phagosome by LLO allows the release of target proteins into the cytosol of host cells. Using T-cell activation assays, we have shown that both live and formalin-killed *E. coli* can efficiently deliver cytotoxic T-lymphocyte (CTL) antigens to the MHC class I presentation pathway of nonprofessional phagocytic cells. Furthermore, we have found that use of a peptidoglycan auxotroph is not required for efficient antigen delivery. In additional T-cell activation assays, *E. coli* without defects in peptidoglycan synthesis delivered antigen with approximately the same efficiency. This system may facilitate the delivery of macromolecules to a wide variety of host cells and has the potential to be used as a delivery vector in a number of in vivo applications, including CTL stimulating vaccines and gene therapy.

- L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN
1999:243466 Document No. 131:43311 Delivery of protein to the cytosol of macrophages using *Escherichia coli* K-12. Higgins, Darren E.; Shastri, Nilabh; Portnoy, Daniel A. (Department of Molecular and Cell Biology, University of California, Berkeley, CA, 94720, USA). Molecular Microbiology, 31(6), 1631-1641 (English) 1999. CODEN: MOMIEE. ISSN: 0950-382X. Publisher: Blackwell Science Ltd..
- AB Listeriolysin O (LLO) is an essential determinant of pathogenicity whose natural biol. role is to mediate lysis of *Listeria monocytogenes* containing phagosomes. In this study, we report that *Escherichia coli* expressing cytoplasmic recombinant LLO can efficiently deliver co-expressed proteins to the cytosol of macrophages. We propose a model in which subsequent or concomitant to phagocytosis the *E. coli* are killed and degraded within phagosomes causing the release of LLO and target proteins from the bacteria. LLO acts by forming large pores in the phagosomal membrane, thus releasing the target protein into the cytosol. Delivery was shown to be rapid, within minutes after phagocytosis. Using this method, a large enzymically active protein was delivered to the cytosol. Furthermore, we demonstrated that the *E. coli*/LLO system is very efficient for delivery of ovalbumin (OVA) to the major histocompatibility (MHC) class I pathway for antigen processing and presentation, greater than 4 logs compared with *E. coli* expressing OVA alone. Moreover, the time required for processing and presentation of an OVA-derived peptide was similar to that previously reported when purified OVA was introduced directly into the cytosol by other methods. Using this system, potentially large amounts of any protein that can be expressed in *E. coli* can be delivered to the cytosol without protein purification. The potential use of this system for the delivery of antigenic protein in vivo and the delivery of DNA are discussed.

- L12 ANSWER 3 OF 3 MEDLINE on STN DUPLICATE 1
1998020885. PubMed ID: 9382741. Bacterial antigen delivery systems: phagocytic processing of bacterial antigens for MHC-I and MHC-II presentation to T cells. Svensson M; Pfeifer J; Stockinger B; Wick M J. (Dept. of Cell and Molecular Biology, Lund University, Sweden.) Behring Institute Mitteilungen, (1997 Feb) No. 98, pp. 197-211. Ref: 49. Journal code: 0367532. ISSN: 0301-0457. Pub.

country: GERMANY: Germany, Federal Republic of. Language: English.

AB Using an in vitro model system we have studied parameters of both bacteria and antigen presenting cells that influence peptide presentation by murine major histocompatibility complex class II (MHC-II) and class I (MHC-I) molecules. To study MHC-II presentation, the HEL (52-61) epitope, which binds the murine MHC-II molecule I-Ak, was expressed as the cytoplasmic Crl-HEL fusion protein in *S. typhimurium*. When murine peritoneal macrophages mediated phagocytic processing of *S. typhimurium* expressing Crl-HEL, HEL (52-61) was processed and presented on I-Ak more efficiently from heat-killed *S. typhimurium* than from viable bacteria, and from a rough LPS strain compared to its isogenic smooth LPS counterpart, most likely due to enhanced phagocytosis of the rough LPS strain. Macrophages also processed phoP *S. typhimurium* strains with greater efficiency for peptide presentation by I-Ak than wild type bacteria while *Salmonella* constitutively expressing phoP were processed for peptide presentation by I-Ak less efficiently than wild type *Salmonella*. We have also shown that macrophage phagocytosis of *E. coli* or *S. typhimurium* results in presentation of bacterial antigens by MHC-I molecules. To investigate the role of post-Golgi MHC-I molecules in this presentation pathway, peritoneal macrophages from TAP1-/- mice, which are deficient in presenting endogenous antigens on MHC-I and lack significant surface MHC-I expression, were co-incubated with bacteria containing the 257-264 epitope from ovalbumin [OVA(257-264)], which binds the murine class I molecule Kb. Peritoneal macrophages from TAP1-/- mice could process bacteria expressing the OVA epitope for recognition by epitope-specific T hybridoma cells. This processing and presentation was reduced in efficiency between three to 100 fold compared to C57BL/6 macrophages, depending on the protein harbouring the OVA (257-264) epitope (Crl-OVA or native OVA). This suggests that the protein context of the OVA (257-264) epitope influences the extent of TAP-independent processing for MHC-I presentation. In addition, we show that murine bone marrow-derived dendritic cells can phagocytose and process viable gram negative bacteria for peptide presentation on MHC-I and MHC-II; inhibition studies showed that acidic compartments in dendritic cells are required for this presentation. These results suggest that dendritic cells may be potential antigen presenting cells used in eliciting specific immune responses against bacteria.

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L13 1 L10 AND ALLERGEN

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L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN

2003:610197 Document No. 139:148468 Methods and composition for delivering nucleic acids and/or proteins to the respiratory system. Chen, Wei; Fu, Xiaoli; Nouraini, Sherry; Zhang, Zhigang (Symbigene, Inc., USA). PCT Int. Appl. WO 2003063786 A2 20030807, 78 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LV, LU, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-US2469 20030127. PRIORITY: US 2002-353885P 20020131; US 2002-353923P 20020131; US 2002-401465P 20020805; US 2002-280769 20021025.

AB Methods and compositions related to the fields of bacteriol., immunol. and gene therapy are provided. In general modified microflora for the delivery of vaccines, **allergens** and therapeutics to the mucosal

surfaces of the respiratory tract are provided. In particular, the compns. and methods are directed at inducing an M-cell mediated immune response to pathogenic diseases. Specifically, methods of vaccine preparation, delivery and mucosal immunization using a Lactic Acid Bacteria (LAB), yeast and LAB that have been modified through fusion with **E. coli** to either present on its cell surface, or secrete, antigenic epitopes derived from pathogenic microorganisms and/or to secrete a therapeutic protein sequence are disclosed.

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L14 0 L10 AND MODIFIED ALLEREN

=> s l10 and allergen
L15 1 L10 AND ALLERGEN

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L15 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
2003:610197 Document No. 139:148468 Methods and composition for delivering nucleic acids and/or proteins to the respiratory system. Chen, Wei; Fu, Xiaoli; Nouraini, Sherry; Zhang, Zhiqing (Symbigene, Inc., USA). PCT Int. Appl. WO 2003063786 A2 20030807, 78 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-US2469 20030127. PRIORITY: US 2002-353885P 20020131; US 2002-353923P 20020131; US 2002-401465P 20020805; US 2002-280769 20021025.

AB Methods and compositions related to the fields of bacteriol., immunol. and gene therapy are provided. In general modified microflora for the delivery of vaccines, **allergens** and therapeutics to the mucosal surfaces of the respiratory tract are provided. In particular, the compns. and methods are directed at inducing an M-cell mediated immune response to pathogenic diseases. Specifically, methods of vaccine preparation, delivery and mucosal immunization using a Lactic Acid Bacteria (LAB), yeast and LAB that have been modified through fusion with **E. coli** to either present on its cell surface, or secrete, antigenic epitopes derived from pathogenic microorganisms and/or to secrete a therapeutic protein sequence are disclosed.

=> s l9 and modified allergen
L16 0 L9 AND MODIFIED ALLERGEN

=> s allergen delivery
L17 60 ALLERGEN DELIVERY

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L18 0 L17 AND "E COLI"

=> s l17 and bacteria
L19 1 L17 AND BACTERIA

=> d l19 cbib abs

L19 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
2001:676622 Document No. 135:225857 Microbial delivery system. Caplan,

Michael (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2001066136
 A2 20010913, 57 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ,
 BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES,
 FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL,
 PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF,
 CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML,
 MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.
 APPLICATION: WO 2000-US33121 20001206. PRIORITY: US 2000-PV195035
 20000306.

AB The present invention provides methods and compns. for treating or
 preventing allergic responses, particularly anaphylactic allergic
 responses, in subjects who are allergic to allergens or susceptible to
 allergies. Methods of the present invention utilize administration of
 microorganisms to subjects, where the microorganisms produce allergens and
 protect the subjects from exposure to the allergens until phagocytosed by
 antigen-presenting cells. Particularly preferred microorganisms are
 gram-neg. **bacteria**, gram-pos. **bacteria**, and yeast.
 Particularly preferred allergens are proteins found in foods, venoms,
 drugs and latex that elicit allergic reactions and anaphylactic allergic
 reactions in individuals who are allergic to the proteins or are
 susceptible to allergies to the proteins. The proteins may also be
 modified to reduce the ability of the proteins to bind and crosslink IgE
 antibodies and thereby reduce the risk of eliciting anaphylaxis without
 affecting T-cell mediated Th1-type immunity.

=> s allergen

L20 155308 ALLERGEN

=> s l20 and reduced IgE binding

L21 255 L20 AND REDUCED IGE BINDING

=> s l21 and bacteria

L22 6 L21 AND BACTERIA

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PROCESSING COMPLETED FOR L22

L23 6 DUP REMOVE L22 (0 DUPLICATES REMOVED)

=> d l23 1-6 cbib abs

L23 ANSWER 1 OF 6 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on SIN
 2008:70107 Document No.: PREV200800062051. A hypoallergenic vaccine obtained
 by tail-to-head restructuring of timothy grass pollen profilin, Phl p 12,
 for the treatment of cross-sensitization to profilin. Westritschnig,
 Kerstin; Linhart, Birgit; Focke-Tejkl, Margarete; Pavkov, Tea; Keller,
 Walter; Ball, Tanja; Mari, Adriano; Hartl, Arnulf; Stoecklinger, Angelika;
 Scheibhofer, Sandra; Thalhamer, Josef; Ferreira, Fatima; Vieths, Stefan;
 Vogel, Lothar; Boehm, Alexandra; Valent, Peter; Valenta, Rudolf [Reprint
 Author]. Med Univ Vienna, Vienna Gen Hosp, Ctr Physiol and Pathophysiol,
 Dept Pathol, Christian Doppler Lab Allergy Res, Währinger Gürtel 18-20,
 A-1090 Vienna, Austria. Rudolf.valenta@meduniwien.ac.at. Journal of
 Immunology, (DEC 1 2007) Vol. 179, No. 11, pp. 7624-7634.
 CODEN: JOIMA3. ISSN: 0022-1767. Language: English.

AB Profilins are highly cross-reactive **allergens** in pollens and
 plant food. In a paradigmatic approach, the cDNA coding for timothy grass
 pollen profilin, Phl p 12, was used as a template to develop a new
 strategy for engineering an allergy vaccine with low IgE reactivity.
 Non-IgE-reactive fragments of Phl p 12 were identified by synthetic
 peptide chemistry and restructured (rs) as a new molecule, Phl p 12-rs.

It comprised the C terminus of Phl p 12 at its N terminus and the Phl p 12 N terminus at its C terminus. Phl p 12-rs was expressed in *Escherichia coli* and purified to homogeneity. Determination of secondary structure by circular dichroism indicated that the restructuring process had reduced the IgE-reactive alpha-helical contents of the protein but retained its beta-sheet conformation. Phl p 12-rs exhibited **reduced IgE binding** capacity and allergenic activity but preserved T cell reactivity in allergic patients. IgG Abs induced by immunization of mice and rabbits with Phl p 12-rs cross-reacted with pollen and food-derived profilins. Recombinant Phl p 12-rs, rPhl p 12-rs, induced less reaginic IgE to the wild-type **allergen** than rPhl p 12. However, the rPhl p 12-rs-induced IgGs inhibited allergic patients' IgE Ab binding to profilins to a similar degree as those induced by immunization with the wild type. Phl p 12-rs specific IgG inhibited profilin-induced basophil degranulation. In conclusion, a restructured recombinant vaccine was developed for the treatment of profilin-allergic patients. The strategy of tail-to-head reassembly of hypoallergenic **allergen** fragments within one molecule represents a generally applicable strategy for the generation of allergy vaccines.

L23 ANSWER 2 OF 6 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN 2007:243317 Document No.: PREV200700234468. Generation of a low Immunoglobulin E-binding mutant of the timothy grass pollen major **allergen** Phl p 5a. Wald, M. [Reprint Author]; Kahlert, H.; Weber, B.; Jankovic, M.; Keller, W.; Cromwell, O.; Nandy, A.; Fiebig, H.. Allergopharma J Ganzer KG, Res and Dev, Hermann Korner Str 52, D-21465 Reinbek, Germany. martin.wald@allergopharma.de. Clinical and Experimental Allergy, (MAR 2007) Vol. 37, No. 3, pp. 441-450. ISSN: 0954-7894. Language: English.

AB Immunotherapy of grass pollen allergy is currently based on the administration of pollen extracts containing natural **allergens**. Specifically designed recombinant **allergens** with reduced IgE reactivity could be used in safer and more efficacious future therapy concepts. This study aimed to generate hypoallergenic variants of the timothy grass major **allergen** Phl p 5a as candidates for **allergen**-specific immunotherapy. Three deletion mutants were produced in *Escherichia coli* and subsequently purified. The overall IgE-binding capacity of the mutants was compared with the recombinant wild-type **allergen** by membrane blot and IgE-inhibition assays. The capacity for effector cell activation was determined in basophil activation assays. T cell proliferation assays with **allergen**-specific T cell lines were performed to confirm the retention of T cell reactivity. Structural properties were characterized by circular dichroism analysis and homogeneity by native isoelectric focusing. The deletion sites were mapped on homology models comprising the N- and C-terminal halves of Phl p 5a, respectively. The double-deletion mutant rPhl p 5a Delta(94-113, 175-198) showed strongly diminished IgE binding in membrane blot and IgE-inhibition assays. Both deletions affect predominantly alpha-helical regions located in the N- and C-terminal halves of Phl p 5a, respectively. Whereas deletion of Delta 175-198 alone was sufficient to cause a large reduction of the IgE reactivity in a subgroup of allergic sera, only the combination of both deletions was highly effective for all the sera tested. rPhl p 5a Delta(94-113, 175-198) consistently showed at least an 11.5-fold reduced capacity to activate basophils compared with the recombinant wild-type molecule, and the T cell proliferation assays demonstrated retention of T cell reactivity. The mutant rPhl p 5a Delta(94-113, 175-198) fulfils the basic requirements for a hypoallergenic molecule suitable for a future immunotherapy of grass pollen allergy; it offers substantially **reduced IgE binding** and maintained T cell reactivity.

L23 ANSWER 3 OF 6 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

2001:2594 Document No.: PREV200100002594. Effects of proline mutations in the major house dust mite **allergen** Der f 2 on IgE-binding and histamine-releasing activity. Takai, Toshiro [Reprint author]; Ichikawa, Saori; Hatanaka, Hideki; Inagaki, Fuyuhiko; Okumura, Yasushi. Bioscience Research and Development Laboratory, Asahi Breweries, Ltd, 1-21, Midori 1-chome, Moriya-machi, Kitasoma-gun, Ibaraki, 302-0106, Japan. toshihiro.takai@asahibeer.co.jp. European Journal of Biochemistry, (November, 2000) Vol. 267, No. 22, pp. 6650-6656. print. CODEN: EJBAC1. ISSN: 0014-2956. Language: English.

AB Der f 2 is the major group 2 **allergen** from house dust mite Dermatophagoides farinae and is composed of 129 amino-acid residues. Wild-type and six proline mutants of Der f 2 (P26A, P34A, P66A, P79A, P95A, and P99A) expressed in Escherichia coli were refolded and purified. Formations of intramolecular disulfide bonds in the purified proteins were confirmed correct. The apparent molecular masses analyzed by gel-filtration were 14-15 kDa. The IgE-binding capacity in the sera of seven mite-allergic patients, inhibitory activity for IgE-binding to immobilized wild-type Der f 2, and activity to stimulate peripheral blood basophils to release histamine in two volunteers were analyzed. P95A and P99A, which slightly differed from the wild-type Der f 2 in their CD spectrum, showed **reduced IgE-binding**, reduced inhibitory activity, and less histamine-releasing activity than the wild-type. P34A also showed reduced allergenicity. Considering that Pro95, Pro99 and Pro34 are closely located in loops at one end of the tertiary structure of Der f 2, we concluded that these loop regions included an IgE-binding site common to all tested patients. P66A showed **reduced IgE-binding** in two sera out of seven. P26A and P79A showed no reduced allergenicity. However, in immunoblot analysis after SDS/PAGE under reduced conditions, P79A showed no or markedly **reduced IgE-binding** while the other mutants showed IgE-binding corresponding to that in the assay using correctly refolded proteins. This suggests that Pro79 is involved in refolding of Der f 2. The findings in this study are important for the understanding of the antigenic structure of mite group 2 **allergens** and for manipulation of the **allergens** for specific immunotherapy.

L23 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2008 ACS on STN

1999:495393 Document No. 131:143513 Methods and reagents for decreasing allergic reactions. Sosin, Howard; Bannon, Gary A.; Burks, A. Wesley, Jr.; Sampson, Hugh A. (University of Arkansas, USA; Mt. Sinai School of Medicine, University of New York). PCT Int. Appl. WO 9938978 A1 19990805, 46 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1999-US2031 19990129. PRIORITY: US 1998-PV73283 19980131; US 1998-PV74590 19980213; US 1998-PV74624 19980213; US 1998-PV74633 19980213; US 1998-141220 19980827.

AB It has been determined that **allergens**, which are characterized by both humoral (IgE) and cellular (T cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by masking the site with a compound that prevents IgE binding or by altering as little as a single amino acid within the protein, most typically a hydrophobic residue towards the center of the IgE-binding epitope, to eliminate IgE binding. The method allows the protein to be altered as minimally as possible, other than within the IgE-binding sites, while retaining the ability of the protein to activate T cells, and, in some embodiments by not

significantly altering or decreasing IgG binding capacity. The examples use peanut **allergens** to demonstrate alteration of IgE binding sites. The critical amino acids within each of the IgE binding epitopes of the peanut protein that are important to Ig binding have been determined. Substitution of even a single amino acid within each of the epitopes led to loss of IgE binding. Although the epitopes shared no common amino acid sequence motif, the hydrophobic residues located in the center of the epitope appeared to be most critical to IgE binding.

L23 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN 1997:500865 Document No.: PREV199799800068. Molecular characterization, expression in *Escherichia coli*, and epitope analysis of a two EF-hand calcium-binding birch pollen **allergen**, Bet v 4. Twardosz, Anna; Hayek, Brigitte; Seiberler, Susanne; Vangelista, Luca; Elfman, Lena; Gronlund, Hans; Kraft, Dietrich; Valenta, Rudolf [Reprint author]. Inst. Gen. Exp. Pathol., AKH, Univ. Vienna, Vienna, Austria. Biochemical and Biophysical Research Communications, (1997) Vol. 239, No. 1, pp. 197-204. CODEN: BBRC9. ISSN: 0006-291X. Language: English.

AB Birch pollen belongs to the most potent elicitors of Type I allergic reactions in early spring. Using serum IgE from a birch pollen allergic patient, two cDNA clones (clone 6 and clone 13) were isolated from a birch pollen expression cDNA library constructed in phage lambda-gt11. Clone 6 encoded a 9.3 kD two EF-hand calcium-binding protein, designated Bet v 4, with significant end to end sequence homology to EF-hand calcium-binding **allergens** from weed and grass pollen. Recombinant Bet v 4, expressed as beta-galactosidase fusion protein, reacted with serum IgE from approximately 20% of pollen allergic individuals. Depletion of **allergen**-bound calcium by EGTA treatment led to a substantial reduction of IgE-binding to Bet v 4, indicating that protein-bound calcium is necessary for the maintenance of IgE-epitopes. The greatly **reduced IgE-binding** capacity of clone 13, a Bet v 4 fragment that lacked the 16 N-terminal amino acids, indicated that the N-terminus contributes significantly to the proteins IgE-binding capacity. By IgE-inhibition experiments it was demonstrated that recombinant Bet v 4 shared IgE-epitopes with natural Bet v 4 and a homologous timothy grass pollen **allergen**. Recombinant Bet v 4 may therefore be considered as a relevant crossreactive plant **allergen**, which may be used for diagnosis and treatment of patients suffering from multivalent plant allergies.

L23 ANSWER 6 OF 6 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN 1994:526700 Document No.: PREV199497539700. Complementary DNA cloning of the major **allergen** Phl p I from timothy grass (Phleum pratense); recombinant Phl p I inhibits IgE binding to group I **allergens** from eight different grass species. Laffer, Sylvia; Valenta, Rudolf; Vrtala, Susanne; Susani, Markus; Van Ree, Ronald; Kraft, Dietrich; Scheiner, Otto; Duchene, Michael [Reprint author]. Inst. General Experimental Pathology, AKH, Waehringergeutal 18-20, A-1090 Vienna, Austria. Journal of Allergy and Clinical Immunology, (1994) Vol. 94, No. 4, pp. 689-698. CODEN: JACIBY. ISSN: 0091-6749. Language: English.

AB Background: Grass pollens, such as pollen from timothy grass (Phleum pratense), represent a major cause of type I allergy. Objective: In this report we attempted to determine how cross-reactive allergenic components of grass pollens from different species can be represented by a minimum number of recombinant **allergens**. Methods: We isolated and sequenced a timothy grass pollen cDNA coding for the major **allergen** Phl p I. A recombinant Phl p I-beta-galactosidase fusion protein, which bound to IgE in 87% of patients with grass pollen allergy, was produced in *Escherichia coli*. Using recombinant Phl p V and Phl p I, we defined representative patients' sera that bound to group I but not to group V **allergens**, as well as sera with reactivity against group

I and group V **allergens**. IgE immunoblot inhibition studies were done with nitrocellulose-blotted pollen extracts from eight grass species with different geographic distribution. Results: Preadsorption of patients' sera with recombinant nonfusion Phl p I strongly **reduced IgE binding** to group I **allergens** from the eight grasses, showing extensive cross-reactivity between species. Conclusion: A single recombinant group I **allergen** contains many of the IgE epitopes of group I isoallergens from a number of different grass species.

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=> s l21 and (E coli)
L24      10 L21 AND (E COLI)
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=> dup remove l24
PROCESSING COMPLETED FOR L24
L25      3 DUP REMOVE L24 (7 DUPLICATES REMOVED)
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=> d l26 1-3 cbib abs
L26 NOT FOUND
The L-number entered has not been defined in this session, or it
has been deleted. To see the L-numbers currently defined in this
session, enter DISPLAY HISTORY at an arrow prompt (=>).
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=> dup remove l25
PROCESSING COMPLETED FOR L25
L26      3 DUP REMOVE L25 (0 DUPLICATES REMOVED)
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=> d l26 1-3 cbib abs
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L26 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN
2007:1320549 Document No. 148:142264 A Hypoallergenic Vaccine Obtained by
Tail-to-Head Restructuring of Timothy Grass Pollen Profilin, Phl p 12, for
the Treatment of Cross-Sensitization to Profilin. Westritschnig, Kerstin;
Linhardt, Birgit; Focke-Tejkl, Margarete; Pavkov, Tea; Keller, Walter;
Ball, Tanja; Mari, Adriano; Hartl, Arnulf; Stoecklinger, Angelika;
Scheibhofer, Sandra; Thalhamer, Josef; Ferreira, Fatima; Vieths, Stefan;
Vogel, Lothar; Boehm, Alexandra; Valent, Peter; Valenta, Rudolf (Christian
Doppler Laboratory for Allergy Research, Division of Immunopathology,
Department of Pathophysiology, Center for Physiology and Pathophysiology,
Medical University of Vienna, Vienna, Austria). Journal of Immunology,
179(11), 7624-7634 (English) 2007. CODEN: JOIMA3. ISSN: 0022-1767.
Publisher: American Association of Immunologists.
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AB Profilins are highly cross-reactive allergens in pollens and
plant food. In a paradigmatic approach, the cDNA coding for timothy grass
pollen profilin, Phl p 12, was used as a template to develop a new
strategy for engineering an allergy vaccine with low IgE reactivity.
Non-IgE-reactive fragments of Phl p 12 were identified by synthetic
peptide chemical and restructured (rs) as a new mol., Phl p 12-rs. It
comprised the C terminus of Phl p 12 at its N terminus and the Phl p 12 N
terminus at its C terminus. Phl p 12-rs was expressed in E. coli
and purified to homogeneity. Determination of secondary structure by
CD indicated that the restructuring process had reduced the IgE-reactive
α-helical contents of the protein but retained its β-sheet
conformation. Phl p 12-rs exhibited reduced IgE binding capacity and
allergic activity but preserved T cell reactivity in allergic patients.
IgG Abs induced by immunization of mice and rabbits with Phl p 12-rs
cross-reacted with pollen and food-derived profilins. Recombinant Phl p
12-rs, rPhl p 12-rs, induced less reaginic IgE to the wild-type allergen
than rPhl p 12. However, the rPhl p 12-rs-induced IgGs inhibited
allergic patients' IgE Ab binding to profilins to a similar degree as
those induced by immunization with the
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wild type. Phl p 12-rs specific IgG inhibited profilin-induced basophil degranulation. Thus, a restructured recombinant vaccine was developed for the treatment of profilin-allergic patients. The strategy of tail-to-head reassembly of hypoallergenic **allergen** fragments within one mol. represents a generally applicable strategy for the generation of allergy vaccines.

L26 ANSWER 2 OF 3 MEDLINE on STN

94366422. PubMed ID: 7521933. Potential therapeutic recombinant proteins comprised of peptides containing recombined T cell epitopes. Rogers B L; Bond J F; Craig S J; Nault A K; Segal D B; Morgenstern J P; Chen M S; Bizinkauskas C B; Counsell C M; Lussier A M; +. (ImmuLogic Pharmaceutical Corporation, Waltham, MA 02154.) Molecular immunology, (1994 Sep) Vol. 31, No. 13, pp. 955-66. Journal code: 7905289. ISSN: 0161-5890. Pub. country: ENGLAND: United Kingdom. Language: English.

AB The complete primary structure of Fel d 12 has been determined and shown to be comprised of two separate polypeptide chains (designated chain 1 and 2). Overlapping peptides covering the entire sequence of both chains of Fel d 1 have been used to map the major areas of human T cell reactivity. The present study describes three non-contiguous T cell reactive regions of < 30 aa in length that were assembled in all six possible configurations using PCR and recombinant DNA methods. These six recombinant proteins comprised of defined non-contiguous T cell epitope regions artificially combined into single polypeptide chains have been expressed in *E. coli*, highly purified, and examined for their ability to bind to human cat-allergic IgE and for human T cell reactivity. Several of these recombined T cell epitope-containing polypeptides exhibit markedly **reduced IgE binding** as compared to the native Fel d 1. Importantly, the human T cell reactivity to individual T cell epitope-containing regions is maintained even though each was placed in an unnatural position as compared to the native molecule. In addition, T cell responses to potential junctional epitopes were not detected. It was also demonstrated in mice that s.c. injection of T cell epitope-containing polypeptides inhibits the T cell response to the individual peptides upon subsequent challenge in vitro. Thus, these recombined T cell epitope-containing polypeptides, which harbor multiple T cell reactive regions but have significantly reduced reactivity with allergic human IgE, constitute a novel potential approach for desensitization to important **allergens**.

L26 ANSWER 3 OF 3 MEDLINE on STN

93375976. PubMed ID: 8366858. Purification and immunochemical characterization of recombinant and native ragweed **allergen** Amb a II. Kuo M C; Zhu X J; Koury R; Griffith I J; Klapper D G; Bond J F; Rogers B L. (ImmuLogic Pharmaceutical Corporation, Waltham, MA.) Molecular immunology, (1993 Aug) Vol. 30, No. 12, pp. 1077-87. Journal code: 7905289. ISSN: 0161-5890. Pub. country: ENGLAND: United Kingdom. Language: English.

AB The complete sequence of a cDNA encoding Amb a II and its relationship to the Amb a I family of **allergens** has recently been described [Rogers et al. (1991) J. Immun. 147, 2547-2552; Griffith et al. (1991a), Int. Archs Allergy appl. Immun. 96, 296-304]. In this study, we present results generated with rabbit antipeptide antisera that recognize Amb a II or Amb a I, but not both. The specificity of two anti-Amb a II antipeptide sera, anti-RAE-50.K and anti-RAE-51.K, was verified on Western blots of recombinant Amb a II and Amb a I. These two sera, directed against separate regions of the Amb a II molecule, detected three individual 38-kDa Amb a II isoforms on 2D Western blots of aqueous ragweed pollen extract. These Amb a II isoforms have pI in the 5.5-5.85 range and can be easily distinguished from Amb a I isoforms with pI in the 4.5-5.2 range detected by an anti-Amb a I specific peptide antiserum. The Amb a

II isoforms have also been individually purified from pollen, positively identified as Amb a II by amino acid sequencing, and visualized as separate bands on IEF gels. An analysis of Amb a II cDNA sequences generated by PCR led to the prediction of three Amb a II isoforms with pI of 5.74, 5.86 and 5.97 that are very similar to the pI deduced from 2D Western blot analysis. Recombinant Amb a I.1 and Amb a II have been expressed in *E. coli*, purified in their denatured form, and examined by ELISA for their capacity to bind pooled allergic human IgE. Purified native Amb a and Amb a II from pollen were shown to have very similar IgE-binding properties. In contrast, Amb a II had a markedly **reduced IgE-binding** capacity as compared to Amb a I.1. These data suggest that recombinant Amb a I.1 and Amb a II, isolated in a denatured form, differ significantly in their IgE-binding properties whereas the native molecules isolated from pollen do not.

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=> s "allergen delivery"
L27          60 "ALLERGEN DELIVERY"
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=> s l27 and mucosal
L28          2 L27 AND MUCOSAL
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PROCESSING COMPLETED FOR L28
L29          1 DUP REMOVE L28 (1 DUPLICATE REMOVED)
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=> d l29 cbib abs
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L29 ANSWER 1 OF 1          MEDLINE on STN          DUPLICATE 1
2003483255. PubMed ID: 14561171. Respiratory tolerance in the protection
against asthma. Macaubas Claudia; DeKruyff Rosemarie H; Umetsu Dale T.
(Division of Immunology and Allergy, Department of Pediatrics, Stanford
University, Stanford, CA 94305-5208, USA.. macaubas@stanford.edu) .
Current drug targets. Inflammation and allergy, (2003 Jun) Vol. 2, No. 2,
pp. 175-86. Ref: 121. Journal code: 101160019. ISSN: 1568-010X. Pub.
country: Netherlands. Language: English.
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AB Understanding the pathways involved in the induction and maintenance of
respiratory tolerance to airborne allergens is important in designing new
therapies for asthma and other allergic diseases that not only control
disease symptoms, but also change or potentially cure the disease.
Respiratory tolerance, and mucosal immunity are maintained by a
complex system of defense mechanisms. Most of the inhaled environmental
load is eliminated by exclusion mechanisms, which include physical
barriers, such as mucus, and cilia as well as a variety of mediators with
anti-microbial and immunomodulatory properties. Blanket immunosuppression
is provided by alveolar macrophages, which inhibit antigen presentation
and T cell responses, in addition to their role in pathogen elimination.
Furthermore, there is antigen specific unresponsiveness or tolerance.
This tolerance is mediated by lung dendritic cells producing IL-10, which
induce the development of CD4+ T regulatory cells. The development of
respiratory tolerance also depends on co-stimulation (CD86, and the
ICOS-ICOSL pathway). Although exposure of the respiratory mucosa to some
pathogenic agents (especially virus, and endotoxin) is associated with
asthma exacerbations, microbial exposure may also promote mucosal
tolerance and protection against the development of allergic diseases, but
the mechanisms involved are not very well understood. Mucosal
-based immunotherapy has been already used as an alternative form of
allergen delivery in immunotherapy, the only available
treatment that is able to reverse established allergic disease.
Strategies to further improve mucosal immunotherapy include the
use of modified allergen derived peptides, and adjuvants like CpG motifs.
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=> s 127 and bacteria
L30 1 L27 AND BACTERIA

=> d 130 cbib abs

L30 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
2001:676622 Document No. 135:225857 Microbial delivery system. Caplan,
Michael (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2001066136
A2 20010913, 57 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ,
BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES,
FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL,
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF,
CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML,
MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.
APPLICATION: WO 2000-US33121 20001206. PRIORITY: US 2000-PV195035
20000306.

AB The present invention provides methods and compns. for treating or
preventing allergic responses, particularly anaphylactic allergic
responses, in subjects who are allergic to allergens or susceptible to
allergies. Methods of the present invention utilize administration of
microorganisms to subjects, where the microorganisms produce allergens and
protect the subjects from exposure to the allergens until phagocytosed by
antigen-presenting cells. Particularly preferred microorganisms are
gram-neg. **bacteria**, gram-pos. **bacteria**, and yeast.
Particularly preferred allergens are proteins found in foods, venoms,
drugs and latex that elicit allergic reactions and anaphylactic allergic
reactions in individuals who are allergic to the proteins or are
susceptible to allergies to the proteins. The proteins may also be
modified to reduce the ability of the proteins to bind and crosslink IgE
antibodies and thereby reduce the risk of eliciting anaphylaxis without
affecting T-cell mediated Th1-type immunity.

=> s 127 and E coli
L31 0 L27 AND E COLI

=> s 127 and heat killed
L32 0 L27 AND HEAT KILLED

=> s (caplan m?/au)
L33 1507 (CAPLAN M?/AU)

=> s 133 and microbial delivery
L34 1 L33 AND MICROBIAL DELIVERY

=> d 134 cbib abs

L34 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
2001:676622 Document No. 135:225857 Microbial delivery
system. Caplan, Michael (Panacea Pharmaceuticals, LLC, USA).
PCT Int. Appl. WO 2001066136 A2 20010913, 57 pp. DESIGNATED STATES: W:
AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU,
CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN,
IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA,
GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.

(English). CODEN: PIXXD2. APPLICATION: WO 2000-US33121 20001206.
PRIORITY: US 2000-PV195035 20000306.

AB The present invention provides methods and compns. for treating or preventing allergic responses, particularly anaphylactic allergic responses, in subjects who are allergic to allergens or susceptible to allergies. Methods of the present invention utilize administration of microorganisms to subjects, where the microorganisms produce allergens and protect the subjects from exposure to the allergens until phagocytosed by antigen-presenting cells. Particularly preferred microorganisms are gram-neg. bacteria, gram-pos. bacteria, and yeast. Particularly preferred allergens are proteins found in foods, venoms, drugs and latex that elicit allergic reactions and anaphylactic allergic reactions in individuals who are allergic to the proteins or are susceptible to allergies to the proteins. The proteins may also be modified to reduce the ability of the proteins to bind and crosslink IgE antibodies and thereby reduce the risk of eliciting anaphylaxis without affecting T-cell mediated Th1-type immunity.

=> s 133 and E coli
L35 10 L33 AND E COLI

=> s 135 and modified
L36 0 L35 AND MODIFIED

=> dup remove l35
PROCESSING COMPLETED FOR L35
L37 3 DUP REMOVE L35 (7 DUPLICATES REMOVED)

=> d l37 1-3 cbib abs

L37 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2008 ACS on STN
2005:259357 Document No. 142:334946 Recombinant allergens with mutated IgE epitopes for treating anaphylaxis induced by food, venom, drug and latex allergens. **Caplan, Michael J.**; Bottomly, Kim H.; Sosin, Howard B.; Burks, A. Wesley; Sampson, Hugh A. (USA). U.S. Pat. Appl. Publ. US 20050063994 A1 20050324, 117 pp., Cont.-in-part of U.S. Ser. No. 100,303. (English). CODEN: USXXCO. APPLICATION: US 2004-899551 20040726. PRIORITY: US 2000-195035P 20000406; US 2000-731375 20001206; US 2002-100303 20020318.

AB The present invention provides methods and compns. for treating or preventing allergic reactions, particularly anaphylactic reactions. Methods of the present invention involve administering microorganisms to allergic subjects, where the microorganisms contain a recombinant version of the protein allergen. The recombinant version can be wild-type or may include mutations within IgE epitopes of the protein allergen. Preferably the compns. are administered rectally. Particularly preferred microorganisms are bacteria such as **E. coli**. Any allergen may be used in the inventive methods. Particularly preferred allergens are anaphylactic allergens including protein allergens found in foods, venoms, drugs and latex. The inventive compns. and methods are demonstrated in the treatment of peanut-induced anaphylaxis.

L37 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 1
1999394992. PubMed ID: 10464133. Bifidobacterial supplementation reduces the incidence of necrotizing enterocolitis in a neonatal rat model. **Caplan M S**; Miller-Catchpole R; Kaup S; Russell T; Lickerman M; Amer M; Xiao Y; Thomson R Jr. (Department of Pediatrics, Northwestern University Medical School, Evanston Hospital, Evanston, Illinois, USA.) Gastroenterology, (1999 Sep) Vol. 117, No. 3, pp. 577-83. Journal code: 0374630. ISSN: 0016-5085. Pub. country: United States. Language: English.

AB BACKGROUND & AIMS: Neonatal necrotizing enterocolitis (NEC) is a

devastating gastrointestinal disease of premature infants partly caused by intestinal bacterial proliferation. Because bifidobacteria are thought to reduce the risk for intestinal disturbances associated with pathogenic bacterial colonization, we hypothesized that exogenous bifidobacterial supplementation to newborn rats would result in intestinal colonization and a reduction in the incidence of neonatal NEC. METHODS: Newborn rat pups were given Bifidobacterium infantis (10(9) organisms per animal daily), Escherichia coli, or saline control and exposed to the NEC protocol consisting of formula feeding (Esbilac; 200 cal. kg(-1). day(-1)) and asphyxia (100% N(2) for 50 seconds followed by cold exposure for 10 minutes). Outcome measures included stool and intestinal microbiological evaluation, gross and histological evidence of NEC, plasma endotoxin concentration, intestinal phospholipase A(2) expression, and estimation of intestinal mucosal permeability. RESULTS: Bifidobacterial supplementation resulted in intestinal colonization by 24 hours and appearance in stool samples by 48 hours. Bifidobacteria-supplemented animals had a significant reduction in the incidence of NEC compared with controls and *E. coli*-treated animals (NEC, 7/24 *B. infantis* vs. 19/27 control vs. 16/23 *E. coli*; $P < 0.01$). Plasma endotoxin and intestinal phospholipase A(2) expression were lower in bifidobacteria-treated pups than in controls, supporting the role of bacterial translocation and activation of the inflammatory cascade in the pathophysiology of NEC. CONCLUSIONS: Intestinal bifidobacterial colonization reduces the risk of NEC in newborn rats.

L37 ANSWER 3 OF 3 MEDLINE on STN DUPLICATE 2
 95073279. PubMed ID: 7982271. Altered mitochondrial redox responses in gram negative septic shock in primates. Simonson S G; Welty-Wolf K; Huang Y T; Griebel J A; Caplan M S; Fracica P J; Piantadosi C A. (Department of Medicine, Duke University Medical Center, Durham, NC 27710.) Circulatory shock, (1994 May) Vol. 43, No. 1, pp. 34-43. Journal code: 0414112. ISSN: 0092-6213. Pub. country: United States. Language: English.

AB Gram negative sepsis causes changes in oxygen supply-demand relationships. We have used a primate model of hyperdynamic gram negative sepsis produced by intravenous infusion of *Escherichia coli* (*E. coli*) to evaluate sepsis-induced alterations in mitochondrial oxidation-reduction (redox) state in muscle in vivo. The redox state of cytochrome a,a3, the terminal member of the intramitochondrial respiratory chain, was assessed in the intact forearm by near-infrared (NIR) spectroscopy. The muscle NIR data were compared to routine measures of oxygen delivery (DO2) and oxygen consumption (VO2). After *E. coli* infusion and fluid resuscitation, DO2 and VO2 showed minimal changes through 24 hr of sepsis. In contrast, changes in cytochrome a,a3 redox state evaluated by NIR occurred within a few hours and were progressive. Mitochondrial functional responses were correlated with structural changes observed on serial muscle biopsies. Gross morphological changes in muscle mitochondria were present in some animals as early as 12 hr, and, in most animals, by 24 hr. The morphologic changes were consistent with decreases in oxidative capacity as suggested by NIR spectroscopy. The NIR data also suggest that two mechanisms are operating to explain abnormalities in oxygen metabolism and mitochondrial function in lethal sepsis. These mechanisms include an early defect in oxygen provision to mitochondria that is followed by a progressive loss in functional cytochrome a,a3 in the muscle.

=> s 133 and allergen
 L38 14 L33 AND ALLERGEN

=> dup remove 138
 PROCESSING COMPLETED FOR L38
 L39 14 DUP REMOVE L38 (0 DUPLICATES REMOVED)

=> d 139 1-14 cbib abs

L39 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN

2005:259357 Document No. 142:334946 Recombinant **allergens** with mutated IgE epitopes for treating anaphylaxis induced by food, venom, drug and latex **allergens**. **Caplan, Michael J.**; Bottomly, Kim H.; Sosin, Howard B.; Burks, A. Wesley; Sampson, Hugh A. (USA). U.S. Pat. Appl. Publ. US 20050063994 A1 20050324, 117 pp., Cont.-in-part of U.S. Ser. No. 100,303. (English). CODEN: USXXCO. APPLICATION: US 2004-899551 20040726. PRIORITY: US 2000-195035P 20000406; US 2000-731375 20001206; US 2002-100303 20020318.

AB The present invention provides methods and compns. for treating or preventing allergic reactions, particularly anaphylactic reactions. Methods of the present invention involve administering microorganisms to allergic subjects, where the microorganisms contain a recombinant version of the protein **allergen**. The recombinant version can be wild-type or may include mutations within IgE epitopes of the protein **allergen**. Preferably the compns. are administered rectally. Particularly preferred microorganisms are bacteria such as E. coli. Any **allergen** may be used in the inventive methods. Particularly preferred **allergens** are anaphylactic **allergens** including protein **allergens** found in foods, venoms, drugs and latex. The inventive compns. and methods are demonstrated in the treatment of peanut-induced anaphylaxis.

L39 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN

2003:855391 Document No. 139:363577 Modified anaphylactic food **allergens** with reduced IgE-binding ability for decreasing clinical reaction to allergy. **Caplan, Michael J.**; Sosin, Howard B.; Sampson, Hugh; Bannon, Gary A.; Burks, A. Wesley; Cockrell, Gael; Compadre, Cesar M.; Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.; Maleki, Soheila J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (USA). U.S. Pat. Appl. Publ. US 20030202980 A1 20031030, 194 pp., Cont.-in-part of U.S. Ser. No. 494,096. (English). CODEN: USXXCO. APPLICATION: US 2002-100303 20020318. PRIORITY: US 1995-9455P 19951229; US 1996-717933 19960923; US 1998-73283P 19980131; US 1998-74633P 19980213; US 1998-74624P 19980213; US 1998-74590P 19980213; US 1998-106872 19980629; US 1998-141220 19980827; US 1998-191593 19981113; US 1999-241101 19990129; US 1999-240557 19990129; US 1999-248674 19990211; US 1999-248673 19990211; US 1999-122560P 19990302; US 1999-122565P 19990302; US 1999-122566P 19990302; US 1999-122450P 19990302; US 1999-122452P 19990302; US 1999-267719 19990311; US 2000-494096 20000128.

AB It has been determined that **allergens**, which are characterized by both humoral (IgE) and cellular (T-cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by altering as little as a single amino acid within the protein, preferably a hydrophobic residue towards the center of the IgE epitope, to eliminate IgE binding. Addnl. or alternatively a modified **allergen** with reduced IgE binding may be prepared by disrupting one or more of the disulfide bonds that are present in the natural **allergen**. The disulfide bonds may be disrupted chemical, e.g., by reduction and alkylation or by mutating one or

more

cysteine residues present in the primary amino acid sequence of the natural **allergen**. In certain embodiments, modified **allergens** are prepared by both altering one or more linear IgE epitopes and disrupting one or more disulfide bonds of the natural **allergen**. In certain embodiments, the methods of the present invention allow **allergens** to be modified while retaining the ability of the protein to activate T-cells, and, in some embodiments by not significantly altering or decreasing IgG binding capacity. The

immunotherapeutics can be prepared in transgenic plants or animals; and administered in injection, aerosol, sublingual or topical form. The immunotherapeutics can also be encoded in gene for gene therapy and delivered by injecting into muscle or skin to induce tolerance. The Examples provided herein use peanut **allergens** to illustrate applications of the invention.

L39 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2008 ACS ON STN
2003:906632 Correction of: 2002:736063 Document No. 139:349665 Correction of: 137:277814 Modified anaphylactic food **allergens** with reduced IgE-binding ability for decreasing clinical reaction to allergy. **Caplan, Michael**; Sosin, Howard; Sampson, Hugh; Bannon, Gary A.; Burks, Wesley A.; Cockrell, Gael; Compadre, Cesar M.; Connaughton, Cathie; Helm, Ricki M.; King, Nina E.; Kopper, Randall A.; Maleki, Sohelia J.; Rabjohn, Patrick A.; Shin, David S.; Stanley, J. Steven (Panacea Pharmaceuticals, USA; et al.). PCT Int. Appl. WO 2002074250 A2 20020926, 299 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US9108 20020318. PRIORITY: US 2001-276822P 20010316.

AB It has been determined that **allergens**, which are characterized by both humoral (IgE) and cellular (T-cell) binding sites, can be modified to be less allergenic by modifying the IgE binding sites. The IgE binding sites can be converted to non-IgE binding sites by altering as little as a single amino acid within the protein, preferably a hydrophobic residue towards the center of the IgE epitope, to eliminate IgE binding. Addnl. or alternatively a modified **allergen** with reduced IgE binding may be prepared by disrupting one or more of the disulfide bonds that are present in the natural **allergen**. The disulfide bonds may be disrupted chemical, e.g., by reduction and alkylation or by mutating one or

more

cysteine residues present in the primary amino acid sequence of the natural **allergen**. In certain embodiments, modified **allergens** are prepared by both altering one or more linear IgE epitopes and disrupting one or more disulfide bonds of the natural **allergen**. In certain embodiments, the methods of the present invention allow **allergens** to be modified while retaining the ability of the protein to activate T-cells, and, in some embodiments by not significantly altering or decreasing IgG binding capacity. The Examples provided herein use peanut **allergens** to illustrate applications of the invention.

L39 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2008 ACS ON STN
2002:123512 Document No. 136:182453 IgE-blocking agents for passive desensitization. **Caplan, Michael J.** (USA). U.S. Pat. Appl. Publ. US 20020018778 A1 20020214, 22 pp., Cont.-in-part of U.S. Ser. No. 455,294. (English). CODEN: USXXCO. APPLICATION: US 2000-731221 20001206. PRIORITY: US 1999-455294 19991206; US 2000-213765P 20000623; US 2000-235797P 20000927.

AB IgE-blocking agents and methods of their use have been developed for desensitizing an individual to an antigen. These IgE-blocking agents work by blocking the antigen-binding site of the IgE mols. and thereby preventing the antigen from binding. These agents typically have up to one IgE binding site present per mol. so as prevent any crosslinking of IgE which could lead to an allergic reaction. The IgE-blocking agents include **allergen** epitope, antibody, or Ig. fragment. Methods of using these novel IgE blocking agents include administering the agents to

alleviate or prevent allergic reactions as well as administering the agents to decrease the risk of allergic reactions during immunotherapy or "rush" immunotherapy. The IgE-blocking agents may be combined with immune adjuvant or cytokine for treatment. Compns. and kits comprising these IgE binding agents are also provided.

L39 ANSWER 5 OF 14 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN 2001:559717 Document No.: PREV200100559717. Methods to block IGE binding to cell surface receptors of mast cells. **Caplan, Michael** [Inventor]; Sosin, Howard [Inventor, Reprint author]. Fairfield, CT, USA. ASSIGNEE: Panacea Pharmaceuticals, LLC. Patent Info.: US 6299875 20011009. Official Gazette of the United States Patent and Trademark Office Patents, (Oct. 9, 2001) Vol. 1251, No. 2. e-file. CODEN: OGUPE7. ISSN: 0098-1133. Language: English.

AB Compositions are administered to block IgE binding to receptors and ultimately displace native IgE from mast cells and related cell types, to prevent the activation of these cells during an allergic response. The compositions consist of a pharmaceutically acceptable carrier for systemic or local administration and an amount of compound binding specifically to the FcepsilonRI IgE binding sites, and more preferably, FcepsilonRI and FcepsilonRII IgE binding sites, to prevent activation and degranulation of mast cells in response to exposure to **allergens**. The compounds can consist of IgE molecules and fragments and modifications thereof, such as IgE fragments, humanized or single chain IgE antibodies or fragments thereof, IgE with a modified Fab, non-crosslinkable IgE, or peptidomimetics which bind to the same site on the receptor as the IgE, jointly referred to herein as "IgE fragments" unless otherwise stated.

L39 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN 2001:676622 Document No. 135:225857 Microbial delivery system. **Caplan, Michael** (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2001066136 A2 20010913, 57 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: P1XXD2. APPLICATION: WO 2000-US33121 20001206. PRIORITY: US 2000-PV195035 20000306.

AB The present invention provides methods and compns. for treating or preventing allergic responses, particularly anaphylactic allergic responses, in subjects who are allergic to **allergens** or susceptible to allergies. Methods of the present invention utilize administration of microorganisms to subjects, where the microorganisms produce **allergens** and protect the subjects from exposure to the **allergens** until phagocytosed by antigen-presenting cells. Particularly preferred microorganisms are gram-neg. bacteria, gram-pos. bacteria, and yeast. Particularly preferred **allergens** are proteins found in foods, venoms, drugs and latex that elicit allergic reactions and anaphylactic allergic reactions in individuals who are allergic to the proteins or are susceptible to allergies to the proteins. The proteins may also be modified to reduce the ability of the proteins to bind and crosslink IgE antibodies and thereby reduce the risk of eliciting anaphylaxis without affecting T-cell mediated Th1-type immunity.

L39 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN 2001:416973 Document No. 135:45198 Prevention of an anaphylactic response to food **allergens**. Bannon, Gary A.; Burks, Wesley A.; **Caplan, Michael J.**; Sampson, Hugh; Sosin, Howard (Panacea Pharmaceuticals, LLC, USA; University of Arkansas; Mount Sinai School of Medicine,

University of New York). PCT Int. Appl. WO 2001040264 A2 20010607, 100 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US33124 20001206. PRIORITY: US 1999-455294 19991206; US 2000-PV213765 20000623; US 2000-PV235797 20000927.

AB The authors disclose methods for reducing allergic responses in individuals sensitive to one or more food antigens. In general, desensitization is achieved by administration of fragments of antigens characterized by a reduced ability to bind to their cognate IgE. In one example, mice were sensitized to peanut **allergens** by intragastric feeding. Administration of peptide fragments of Ara h 2, or an **allergen** mutant with altered IgE binding sites, abrogated an increase in IgE levels and anaphylactic sequelae.

L39 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2008 ACS ON STN
2001:416792 Document No. 135:10056 Controlled delivery of antigens.
Caplan, Michael; Burks, Wesley A., Jr.; Bannon, Gary A. (The Board of Trustees of the University of Arkansas, USA; Panacea Pharmaceuticals, LLC). PCT Int. Appl. WO 2001039800 A2 20010607, 34 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US42607 20001206. PRIORITY: US 1999-PV169330 19991206.

AB Formulations and methods are developed for delivering antigens to individuals in a manner that substantially reduces contact between the antigen and IgE receptors displayed on the surfaces of cells involved in mediating allergic responses, which target delivery of antigen to dendritic, phagocytic and antigen presenting cells (APCs), and which have improved pharmacokinetics. By reducing direct and indirect association of antigens with antigen-specific IgE antibodies, the risk of an allergic reaction, possibly anaphylactic shock, is reduced or eliminated. Particularly preferred antigens are those that may elicit anaphylaxis in individuals, including food antigens, insect venom and rubber-related antigens. In the preferred embodiments, the compns. include one or more antigens in a delivery material such as a polymer, in the form of particles or a gel, or lipid vesicles or liposomes, any of which can be stabilized or targeted to enhance delivery. Preferably, the antigen is surrounded by the encapsulation material. Alternatively or addnl., the antigen is displayed on the surface of the encapsulation material. One result of encapsulating antigen is the reduction in association with antigen-specific IgE antibodies. In some embodiments, antigens are stabilized or protected from degradation until the antigen can be recognized and endocytized by APCs which are involved in eliciting cellular and humoral immune responses. In a preferred embodiment, the formulation is designed to deliver antigens to individuals in a manner designed to promote a Th1-type mediated immune response and/or in a manner designed to suppress a Th2 response. In still another embodiment, the formulation effects preferential release of the antigen within APCs. For example, various synthetic, biodegradable polymeric microsphere formulations were prepared containing peanut **allergen**. Microspheres based on poly(lactide-co-glycolide) (75:25) containing an acid end group (0.1% loaded

with **allergen**) had the lowest amount (<20 ng) of peanut protein detected on the outside of the microsphere and the best range of peanut protein **allergens** contained within the microspheres (having mol. wts. ranging from 15 kDa to 70 kDa).

L39 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN

2001:416791 Document No. 135:32734 Passive desensitization. **Caplan, Michael** (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2001039799 A2 20010607, 76 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, BR, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US33125 20001206. PRIORITY: US 1999-455294 19991206; US 2000-PV213765 20000623; US 2000-PV235797 20000927.

AB IgE-blocking agents and methods of their use have been developed for desensitizing an individual to an antigen. These IgE-blocking agents work by blocking the antigen-binding site of the IgE mols. and thereby preventing the antigen from binding. These agents typically have up to one IgE binding site present per mol. so as to prevent any crosslinking of IgE which could lead to an allergic reaction. Methods of using these novel IgE blocking agents include administering the agents to alleviate or prevent allergic reactions as well as administering the agents to decrease the risk of allergic reactions during immunotherapy or "rush" immunotherapy. Comps. and kits comprising these IgE binding agents are also provided.

L39 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN

2000:741936 Document No. 133:308997 Methods for skewing the balance between Th1 and Th2 immune responses. Bottomly, H. Kim; **Caplan, Michael J.**; Sosin, Howard B. (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2000061157 A1 20001019, 76 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, BR, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US9270 20000407. PRIORITY: US 1999-290029 19990409.

AB The present invention provides comps. and methods for regulating immune system reactions by biasing T cell responses away from Th1 or Th2 responses in a pre-determined manner. Control is effected at the stage of antigen/APC encounter and/or at the stage of APC/T cell encounter. In preferred embodiments, a Th1 or Th2 response is inhibited through induction of the alternative response. The inventive methods and reagents are particularly useful for the management of autoimmune disorders, allergy, and asthma.

L39 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN

2000:666624 Document No. 133:251267 Immunostimulatory nucleic acids and antigens. Sosin, Howard B.; **Caplan, Michael J.** (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2000054803 A2 20000921, 103 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, BR, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB,

GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English).
CODEN: PTXXD2. APPLICATION: WO 2000-US7213 20000316. PRIORITY: US
1999-PV124595 19990316; US 1999-PV125071 19990317.

- AB The present invention provides methods and compns. for modulating an individual's immune response to antigens. It is an aspect of the present invention that allergic responses to antigens, which in some cases lead to asthma and even anaphylaxis, can be treated or prevented by administering compns. having immunostimulatory oligonucleotides having unmethylated CpG sequences. It is another aspect of the present invention that allergies to antigens, especially one that result in asthma and anaphylaxis, can be treated or prevented by administering compns. containing immunostimulatory oligonucleotides having unmethylated CpG dinucleotide sequences and further comprising antigen(s), fragments of the antigen, mixts. of fragments of the antigen, antigens modified to reduce Th2-type immune responses, and fragments of the antigen modified to reduce Th2-type immune responses. Cellular systems for studying immunostimulation by CpG containing nucleic acids include in vivo, in vitro or ex vivo systems.

L39 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
2000:573822 Document No. 133:163051 Method for altering immune responses to polypeptides. **Caplan, Michael** (Panacea Pharmaceuticals, LLC, USA). PCT Int. Appl. WO 2000047610 A2 20000817, 49 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PTXXD2.
APPLICATION: WO 2000-US3448 20000210. PRIORITY: US 1999-247406 19990210.

- AB The author discloses methodol. for altering undesirable immune responses to polypeptides by their recombinant engineering. Such polypeptides are safer and can be more efficacious when introduced into a human, other mammal, or other animal. The disclosed method involves providing a collection of mutant polypeptides where the amino acid sequence of each mutant polypeptide differs in at least one position from a polypeptide of interest. Mutant polypeptides that exhibit less of the immune response than the polypeptide of interest, but still retain desired characteristic(s) are then identified. The collection of mutant polypeptides is provided by mutagenizing nucleic acid encoding a polypeptide and expressing the mutagenized nucleic acid.

L39 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
2000:420987 Document No. 133:57594 Decreasing allergic reactions by inhibition of IgE binding. **Caplan, Michael; Sosin, Howard** (USA). PCT Int. Appl. WO 2000035484 A2 20000622, 21 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PTXXD2.
APPLICATION: WO 1999-US30238 19991217. PRIORITY: US 1998-216117 19981218.

- AB The authors disclose methodol. for preventing allergic response by the inhibition of IgE binding to its epitopes on cognate **allergens**. Mols. which bind to these epitopes can be identified and synthesized and then formulated to coat or blend with the allergenic components to prevent IgE binding. In one example, the inhibitory mols. are IgE fragments selected using phage display technol. In a second example, the masking reagents are CDR-derived peptides or peptidomimetics which bind to the relevant epitopes on the **allergens**.

L39 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2008 ACS on STN
 1999:783962 Document No. 132:22180 Compounds binding specifically to
 FcεRI IgE binding sites for pan-specific anti-allergy therapy.
Caplan, Michael; Sosin, Howard (USA). PCT Int. Appl. WO 9962550
 A1 19991209, 28 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB,
 BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR,
 HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD,
 MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
 TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM;
 RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB,
 GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English).
 CODEN: PIXXD2. APPLICATION: WO 1999-US12526 19990604. PRIORITY: US
 1998-90375 19980604.

AB Compns. are administered to block IgE binding to receptors and ultimately
 displace native IgE from mast cells and related cell types, to prevent the
 activation of these cells during an allergic response. The compns.
 consist of a pharmaceutically acceptable carrier for systemic or local
 administration and an amount of compound binding specifically to the
 FcεRI IgE binding sites, and more preferably, FcεRI and
 FcεRII IgE binding sites, to prevent activation and degranulation
 of mast cells in response to exposure to **allergens**. The compds.
 can consist of IgE mols. and fragments and modifications thereof, such as
 IgE fragments, humanized or single chain IgE antibodies or fragments
 thereof, IgE with a modified Fab, non-cross-linkable IgE, or
 peptidomimetics which bind to the same site on the receptor as the IgE,
 jointly referred to herein as "IgE fragments" unless otherwise stated.

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=> s allergy vaccine

L1 686 ALLERGY VACCINE

=> s l1 and E coli

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L3 ANSWER 1 OF 5 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on
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2010:810053 The Genuine Article (R) Number: 621QI. Recombinant Fusion
Proteins Assembling Der p 1 and Der p 2 Allergens from Dermatophagoides
pteronyssinus.

Moingeon, Philippe (Reprint). Stallergenes SA, Res & Dev, 6 Rue Alexis
Tocqueville, FR-92183 Antony, France (Reprint). E-mail:

pmoingeon@stallergenes.fr. Bussieres, Laetitia; Bordas-Le Floch,
Veronique; Bulder, Ingrid; Chabre, Henri; Nony, Emmanuel; Lautrette,
Aurelie; Berrouet, Christelle; Nguéfeu, Yvette; Horiot, Stephane;
Baron-Bodo, Veronique; Van Overtvelt, Laurence; De Conti, Anne Marie;
Lemoine, Pierrick; Batard, Thierry; Moingeon, Philippe (Reprint).
Stallergenes, Res & Dev, Antony, France. E-mail:
pmoingeon@stallergenes.fr. Schlegel, Anne; Maguet, Nicolas; Mouz, Nicolas.
PX Therapeut, Grenoble, France.

INTERNATIONAL ARCHIVES OF ALLERGY AND IMMUNOLOGY (2010) Vol. 153, No. 2,
pp. 141-151. ISSN: 1018-2438. Publisher: KARGER, ALLSCHWILERSTRASSE 10,
CH-4009 BASEL, SWITZERLAND. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Background: Fusion proteins assembling multiple allergens can be
engineered by recombinant DNA technologies in order to produce tools for
diagnostic and immunotherapeutic purposes. Herein, we developed and
characterized chimeras assembling Der p 1 and Der p 2 allergens as
potential candidate vaccines against house dust mite allergy. Methods:
Fusion proteins encompassing Der p 2 with either mature or proDer p 1 were
expressed in Escherichia coli or Pichia pastoris. Forms with mutation in
Der p 1 catalytic site were also engineered. Purified chimeras were

characterized by immunoblotting, circular dichroism, disulfide bond mapping, basophil and T lymphocyte stimulation assays. Results: Four fusion proteins were expressed in *E. coli* as inclusion bodies, whereas only chimeras comprising proDer p 1 were obtained in yeast. All such hybrids formed polymers and aggregates, and yeast-expressed chimeras were unstable. Circular dichroism analysis performed after refolding of bacteria expressed chimeras encompassing mature Der p 1 confirmed partial folding, consistent with the occurrence of both correct and inappropriate intramolecular disulfide bonds. All fusion molecules were recognized by Der p 1- and Der p 2-specific human IgEs, monoclonal and polyclonal antibodies. Fusion proteins activate basophils from mite-allergic patients and trigger the proliferation of specific CD4+ T cells, albeit to a lower level when compared to individual allergens. Conclusions: Production of multiple Der p 1- Der p 2 fusion proteins exhibiting partial folding and proper antigenic properties has been achieved. Nonetheless, significant solubility and stability issues currently limit the application of such chimeras for immunotherapy or diagnostic. Copyright (C) 2010 S. Karger AG, Basel

L3 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2010 ACS ON STN

2009:538492 Document No. 150:512639 A Combination Vaccine for Allergy and Rhinovirus Infections Based on Rhinovirus-Derived Surface Protein VP1 and a Nonallergenic Peptide of the Major Timothy Grass Pollen Allergen Phl p 1. Edlmayr, Johanna; Niespodziana, Katarzyna; Linhart, Birgit; Focke-Tejkl, Margarete; Westritschnig, Kerstin; Scheibhofer, Sandra; Stoecklinger, Angelika; Kneidinger, Michael; Valent, Peter; Campana, Raffaella; Thalhamer, Josef; Popow-Kraupp, Theresia; Valenta, Rudolf (Christian Doppler Laboratory for Allergy Research, Division of Immunopathology, Department of Pathophysiology, Department of Internal Medicine I, Division of Hematology and Hemostaseology, Department of Virology, Medical University of Vienna, Vienna, 1090, Austria). Journal of Immunology, 182(10), 6298-6306 (English) 2009. CODEN: JOIM3. ISSN: 0022-1767. Publisher: American Association of Immunologists.

AB Allergens and rhinovirus infections are among the most common elicitors of respiratory diseases. The authors report the construction of a recombinant combination vaccine for allergy and rhinovirus infections based on rhinovirus-derived VP1, the surface protein which is critically involved in infection of respiratory cells, and a non-allergenic peptide of the major grass pollen allergen Phl p 1. Recombinant hybrid mols. consisting of VP1 and a Phl p 1-derived peptide of 31 aa were expressed in *E. coli*. The hybrid mols. did not react with IgE Abs from grass pollen allergic patients and lacked allergenic activity when exposed to basophils from allergic patients. Upon immunization of mice and rabbits, the hybrids did not sensitize against Phl p 1 but induced protective IgG Abs that cross-reacted with group 1 allergens from different grass species and blocked allergic patients' IgE reactivity to Phl p 1 as well as Phl p 1-induced basophil degranulation. Moreover, hybrid-induced IgG Abs inhibited rhinovirus infection of cultured human epithelial cells. The principle of fusing non-allergenic allergen-derived peptides onto viral carrier proteins may be used for the engineering of safe **allergy vaccines** which also protect against viral infections.

L3 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2010 ACS ON STN

2007:1320549 Document No. 148:142264 A hypoallergenic vaccine obtained by tail-to-head restructuring of timothy grass pollen profilin, Phl p 12, for the treatment of cross-sensitization to profilin. Westritschnig, Kerstin; Linhart, Birgit; Focke-Tejkl, Margarete; Pavkov, Tea; Keller, Walter; Ball, Tanja; Mari, Adriano; Hartl, Arnulf; Stoecklinger, Angelika; Scheibhofer, Sandra; Thalhamer, Josef; Ferreira, Fatima; Vieths, Stefan; Vogel, Lothar; Boehm, Alexandra; Valent, Peter; Valenta, Rudolf (Christian Doppler Laboratory for Allergy Research, Division of Immunopathology,

Department of Pathophysiology, Center for Physiology and Pathophysiology, Medical University of Vienna, Vienna, Austria). Journal of Immunology, 179(11), 7624-7634 (English) 2007. CODEN: JOIMA3. ISSN: 0022-1767. Publisher: American Association of Immunologists.

- AB Profilins are highly cross-reactive allergens in pollens and plant food. In a paradigmatic approach, the cDNA coding for timothy grass pollen profilin, Phl p 12, was used as a template to develop a new strategy for engineering an **allergy vaccine** with low IgE reactivity. Non-IgE-reactive fragments of Phl p 12 were identified by synthetic peptide chemical and restructured (rs) as a new mol., Phl p 12-rs. It comprised the C terminus of Phl p 12 at its N terminus and the Phl p 12 N terminus at its C terminus. Phl p 12-rs was expressed in *E. coli* and purified to homogeneity. Determination of secondary structure by CD indicated that the restructuring process had reduced the IgE-reactive α -helical contents of the protein but retained its β -sheet conformation. Phl p 12-rs exhibited reduced IgE binding capacity and allergenic activity but preserved T cell reactivity in allergic patients. IgG Abs induced by immunization of mice and rabbits with Phl p 12-rs cross-reacted with pollen and food-derived profilins. Recombinant Phl p 12-rs, rPhl p 12-rs, induced less reagenic IgE to the wild-type allergen than rPhl p 12. However, the rPhl p 12-rs-induced IgGs inhibited allergic patients' IgE Ab binding to profilins to a similar degree as those induced by immunization with the wild type. Phl p 12-rs specific IgG inhibited profilin-induced basophil degranulation. Thus, a restructured recombinant vaccine was developed for the treatment of profilin-allergic patients. The strategy of tail-to-head reassembly of hypoallergenic allergen fragments within one mol. represents a generally applicable strategy for the generation of **allergy vaccines**.

- L3 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2010 ACS ON STN
2006:498138 Document No. 145:97501 Protein and cDNA sequence of tartary buckwheat allergenic storage protein (Tbc) and uses in treating allergy to Fagopyrum. Wang, Zhuanhua; Zhang, Zheng; Li, Yuying; Jing, Wei (Shanxi University, Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1715410 A 20060104, 13 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 2010-92438 20041224.

- AB Described are the protein and cDNA sequences of tartary buckwheat allergenic storage protein (Tbc) and their uses in treating allergy to Fagopyrum. The full-length cDNA sequence encoding for Tbc with 515 amino acids is 1548 bp. Tbc has a mol. weight of 58 kDa and contains a signal peptide sequence of 22 amino acids and a mature peptide sequence of 493 amino acids. A functional protein can be obtained by expressing an expression vector containing 3' end sequence of Tbc gene in *E. coli*, and this functional protein has a mol. weight of 22kDa. Both the tartary buckwheat allergenic storage protein and said functional protein are main allergens in Fagopyrum tataricum for inducing I-type allergy reaction mediated by IgE. The invention is useful in preparing DNA vaccine and drugs for diagnosis and treatment of allergy specific to tartary buckwheat.

- L3 ANSWER 5 OF 5 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
1998:154044 Document No.: PREV199800154044. Development of BCG based **allergy vaccines**: A shuttle plasmid vector that allows production and secretion of antigens. Kumar, M. [Reprint author]; Behera, A. K.; Matsuse, H.; Lockey, R. F.; Mohapatra, S. S. Div. Allergy and Immunol., Univ. South Florida, Tampa, FL, USA. Journal of Allergy and Clinical Immunology, (Jan., 1998) Vol. 101, No. 1 PART 2, pp. S79. print. Meeting Info.: 54th Annual Meeting of the American Academy of Allergy, Asthma and Immunology. Washington, DC, USA. March 13-18, 1998. American Academy of Allergy, Asthma, and Immunology. CODEN: JACIBY. ISSN: 0091-6749. Language: English.

=> s vaccine carrier
L4 1455 VACCINE CARRIER

=> s l4 and E coli
L5 53 L4 AND E COLI

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L6 0 L5 AND DEAD

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L7 1 L5 AND KILLED

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L7 ANSWER 1 OF 1 MEDLINE on STN
1995066342. PubMed ID: 7975861. Influence of strain viability and antigen dose on the use of attenuated mutants of Salmonella as **vaccine carriers**. Cardenas L; Dasgupta U; Clements J D. (Department of Microbiology and Immunology, Tulane University School of Medicine, New Orleans, LA 70112.) Vaccine, (1994 Jul) Vol. 12, No. 9, pp. 833-40. Journal code: 8406899. ISSN: 0264-410X. L-ISSN: 0264-410X. Pub. country: ENGLAND: United Kingdom. Language: English.

AB It is now accepted that oral **killed** typhoid vaccines are not effective at inducing protective anti-typhoid immunity. It is not known whether oral **killed** Salmonella can function as an effective carrier of other antigens to the immune system. In order to test this hypothesis, we immunized groups of mice with viable and non-viable preparations of aroA Salmonella dublin strain EL23 which codes for production of the binding subunit of the heat-labile enterotoxin of Escherichia coli (LT-B). Animals immunized orally with viable EL23 developed serum and mucosal anti-LT-B responses consistent with our previous findings. Significantly, mice immunized orally with ultraviolet-**killed** EL23 developed serum and mucosal antibody responses equivalent to those which developed in animals orally immunized with the same number of viable EL23. We extended these observations to include a number of methods of killing the organisms which may also preserve the ability of these strains to function as carriers. Our findings indicate that viability is not a requirement for use of a Salmonella strain as an immunological carrier. Moreover, our evidence indicates that bacteraemia and persistence in tissues are not necessary for oral priming, and therefore it may be best to dissociate the question of what makes the best live oral anti-typhoid vaccine from the question of what makes a good carrier of heterologous antigens.

=> s l5 and allergen
L8 0 L5 AND ALLERGEN

=> s peanut allergen
L9 1631 PEANUT ALLERGEN

=> s l9 and "Ara h6"
L10 14 L9 AND "ARA H6"

=> s l10 and E coli
L11 1 L10 AND E COLI

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L11 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN
2001:320970 Document No. 135:225750 Four novel recombinant **peanut**

allergens: more information, more problems. Becker, W. -M.; Kleber-Janke, T.; Lepp, U. (Forschungszentrum Borstel, Borstel, D-23845, Germany). International Archives of Allergy and Immunology, 124(1-3), 100-102 (English) 2001. CODEN: IAAIEG. ISSN: 1018-2438. Publisher: S. Karger AG.

- AB An ideal method to clone the allergenic entities completely in peanuts is the phage display system where patients' IgE is the selection and enrichment agent. In this system, the presented allergen and its gene-containing phages are selected by patients' IgE using the panning method. The selected phages are multiplied in *Escherichia coli* and in the next cycle selected and enriched and so on. After five cycles, six different allergens were cloned. Two of them were the well-known major allergens of peanut, Ara h 1 and Ara h 2. Ara h 4, Ara h 5 (profilin), Ara h 6 and Ara h 7 are first described in their structure deduced from the DNA sequence. Ara h 4, Ara h 6 and Ara h 7 show significant sequence similarities to seed storage proteins, whereby Ara h 6 and 7 belong to the conglutin family. Ara h 3 is an isoform of Ara h 4 with 91% identity. An elegant way to overcome the expression problems of recombinant **peanut allergens in E. coli** was found. This opened the way to examining the question whether certain **peanut allergens** are associated with clin. symptoms and the severity of the clin. reactions. The fact that Ara h 6 was detected by the IgE of patients with shock symptoms and urticaria but not by the IgE of patients with an isolated oral allergy syndrome may be an indication that Ara h 6 is a candidate for association with severe clin. reactions.

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L12 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
2010:703419 Bioinformatics comparison of **peanut allergen** Ara h2 and **Ara h6**. Xia, Li-xin; Yan, Hao; Tang, Mu-jin; Zhu, Hai; Liu, Zhi-gang (College of Medicine State Key Laboratory of Respiratory Disease for Allergy, Shenzhen University, Shenzhen, 518060, Peop. Rep. China). Shenzhen Daxue Xuebao, Ligongban, 27(2), 241-245 (Chinese) 2010. CODEN: SDXLEX. ISSN: 1000-2618. Publisher: Shenzhen Daxue Xuebao, Bianjibu.

- AB The allergens Ara h2 and **Ara h6** are the most clin. relevant allergens of peanut allergies. Ara h2 can completely inhibit the IgE binding ability of **Ara h6** while **Ara h6** can only partially inhibit IgE epitope of Ara h2. Comparison between the primary and tertiary structures of Ara h2 and **Ara h6** is carried out for the exploration of this mechanism. Ara h2 contains a unique fragment (from 60 to 73) which includes two of the three major linear IgE epitopes of Ara h2. A 3-D structure of Ara h2 is obtained by homol. modeling with **Ara h6** as the template. When the structure of Ara h2 and **Ara h6** are superposed, an extra outstretched anti-parallel β -sheet linked a loop (from 58 to 72) is found within the structure of Ara h2. It also contains the sequence encoding the above-mentioned two IgE epitopes. This study gives a explanation for the difference of Ara h2 and **Ara h6** by comparison of primary and tertiary structures of Ara h2 and **Ara h6**. The explanation lays down the foundation for understanding of the mechanisms of peanut allergies and future development of hypoallergic vaccines.

L12 ANSWER 2 OF 7 EMBASE COPYRIGHT (c) 2010 Elsevier B.V. All rights reserved on STN

2009159428 EMBASE Validation of gel-free, label-free quantitative proteomics approaches: Applications for seed allergen profiling. Stevenson, Severin E.; Thelen, Jay J. (correspondence). Department of Biochemistry, Interdisciplinary Plant Group, 109 Christopher S. Bond Life Science Center, Columbia, MO 65211, United States. thelenj@missouri.edu. Chu, Ye; Ozias-Akins, Peggy. Department of Horticulture, University of Georgia, Tifton, GA 31793, United States. Journal of Proteomics Vol. 72, No. 3, pp. 555-566 13 Apr 2009.

Refs: 41.

ISSN: 1874-3919.

Elsevier, P.O. Box 211, Amsterdam, 1000 AE, Netherlands.

S 1874-3919(08)00186-3. Pub. Country: Netherlands. Language: English.

Summary Language: English.

Entered STN: 20090417. Last Updated on STN: 20090417

AB Plant seeds provide a significant portion of the protein present in the human diet, but are also the major contributors of allergenic proteins that cause a majority of the reported cases of food-induced anaphylaxis. New varieties of grains and nuts as well as other seeds could be screened for allergen content before they are introduced as cultivars for food production using mass spectrometry-based quantitation approaches. Here, we present a practical comparison of gel-free and label-free methods, peak integration and spectral counting, using a linear trap mass spectrometer. The results show that both methods are linear and reproducible with protein standards from 5-200 ng, however, bioinformatic analysis for spectral counting is much simpler and therefore more amenable to high-throughput sample processing. We therefore applied spectral counting towards the analysis of transgenic peanut lines targeting the reduction of a prominent allergen. Spectral count analysis of an Ara h 2 (conglutin-7) RNA-silenced line confirmed reduction of this allergen as well as Ara h 6 (conglutin), which was further confirmed by quantitative immunoblotting. Other collateral changes include an increase in Ara h 10 (oleosin 1) in one of the three lines, a decrease in conarachin as well as increased 13-lipoxygenase and Ahy-3 (arachin) in two of three lines. .COPYRGT. 2008 Elsevier B.V.

L12 ANSWER 3 OF 7 MEDLINE on STN DUPLICATE 1
2007431082. PubMed ID: 17651153. Children with peanut allergy recognize predominantly Ara h2 and **Ara h6**, which remains stable over time. Flinterman A E; van Hoffen E; den Hartog Jager C F; Koppelman S; Pasmans S G; Hoekstra M O; Bruijnzeel-Koomen C A; Knulst A C; Knol E F. (Department of Dermatology/Allergology, University Medical Centre Utrecht, The Netherlands.) Clinical and experimental allergy : journal of the British Society for Allergy and Clinical Immunology. (2007 Aug) Vol. 37, No. 8, pp. 1221-8. Journal code: 8906443. ISSN: 0954-7894. L-ISSN: 0954-7894. Pub. country: England: United Kingdom. Language: English.

AB BACKGROUND: In peanut-allergic adults, IgE is mainly directed to Ara h1 and Ara h2. More recently, a role for **Ara h6** has been suggested. In contrast to adults, IgE in children can fluctuate over time. Therefore, children may have a more dynamic reactivity to peanut. OBJECTIVE: To examine the IgE reactivity to major **peanut allergens** in peanut-allergic children at two subsequent time-points. METHODS: Twenty children (3-15 years old) with peanut allergy, confirmed by a double-blind placebo-controlled food challenge (DBPCFC), were included. Just before and 20 months after DBPCFC, IgE reactivity to purified Ara h1, Ara h2, Ara h3 and **Ara h6** was studied by immunoblots and skin prick tests (SPTs). RESULTS: Before DBPCFC, all peanut-allergic children showed IgE reactivity to Ara h2; **Ara h6** was recognized by 16 children, and Ara h1 and Ara h3 by 10 children. After 20 months, peanut-specific IgE levels (median 23 kU/L) and the individual recognition of major allergens were comparable with the levels and recognition before challenge (median 28.2 kU/L). SPT with Ara h2 and **Ara h6** was positive in most children,

whereas SPT with Ara h1 and Ara h3 was positive in approximately half of the children. **Ara h6** induced the largest weals. None of the parameters were related to the severity of peanut allergy. CONCLUSION: Ara h2 and **Ara h6** are the most frequently recognized major **peanut allergens** in children. The individual reactivity to the major **peanut allergens** remained stable over time, despite DBPCFC.

L12 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

2001:380762 Document No. 135:1229 Isolation and sequence of a full length genomic clone for allergen Ara h2 and down-regulation and silencing of allergen genes in transgenic peanut seeds. Dodo, Hortense W.; Arntzen, Charles J.; Konan, Koffi N'da; Viquez, Olga M. (Alabama A + M University, USA). PCT Int. Appl. WO 2001036621 A2 20010525, 73 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US31657 20001120. PRIORITY: US 1999-FV167255 19991119.

AB An allergen-free transgenic peanut seed is produced by recombinant methods. Peanut plants are transformed with multiple copies of each of the allergen genes, or fragments thereof, to suppress gene expression and allergen protein production. Alternatively, peanut plants are transformed with **peanut allergen** antisense genes introduced into the peanut genome as antisense fragments, sense fragments, or combinations of both antisense and sense fragments. Peanut transgenes are under the control of the 35S promoter, or the promoter of the Ara h2 gene to produce antisense RNAs, sense RNAs, and double-stranded RNAs for suppressing allergen protein production in peanut plants. A full length genomic clone for allergen Ara h2 is isolated and sequenced. The ORF is 622 nucleotides long. The predicted encoded protein is 207 amino acids long and includes a putative transit peptide of 21 residues. One polyadenylation signal is identified at position 951. Six addnl. stop codons are observed. A promoter region was revealed containing a putative TATA box located at position -72. Homologous regions were identified between Ara h2, h6, and h7, and between Ara h3 and h4, and between Ara h1P41B and Ara h1P17. The homologous regions will be used for the screening of peanut genomic library to isolate all **peanut allergen** genes and for down-regulation and silencing of multiple **peanut allergen** genes.

L12 ANSWER 5 OF 7 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on STN

2001:328312 The Genuine Article (R) Number: 421HV. A strategy for the identification of proteins targeted by thioredoxin. Buchanan B B (Reprint). Univ Calif Berkeley, Dept Plant & Microbial Biol, 111 Koshland Hall, Berkeley, CA 94720 USA (Reprint). Yano H; Wong J H; Lee Y M; Cho M J. Univ Calif Berkeley, Dept Plant & Microbial Biol, Berkeley, CA 94720 USA; Univ Calif Davis, Mol Struct Facil, Davis, CA 95616 USA; Hokuriku Natl Agr Expt Stn, Niigata 9430193, Japan. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA (10 APR 2001) Vol. 98, No. 8, pp. 4794-4799. ISSN: 0027-8424. Publisher: NATL ACAD SCIENCES, 2101 CONSTITUTION AVE NW, WASHINGTON, DC 20418 USA. Language: English. *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB Thioredoxins are 12-kDa proteins functional in the regulation of cellular processes throughout the animal, plant, and microbial kingdoms. Growing evidence with seeds suggests that an h type of thioredoxin,

reduced by NADPH via NADP-thioredoxin reductase, reduces disulfide bonds of target proteins and thereby acts as a wakeup call in germination. A better understanding of the role of thioredoxin in seeds as well as other systems could be achieved if more were known about the target proteins. To this end, we have devised a strategy for the comprehensive identification of proteins targeted by thioredoxin. Tissue extracts incubated with reduced thioredoxin are treated with a fluorescent probe (monobromobimane) to label sulfhydryl groups. The newly labeled proteins are isolated by conventional two-dimensional electrophoresis: (i) nonreducing/reducing or (ii) isoelectric focusing/reducing SDS/PAGE. The isolated proteins are identified by amino acid sequencing. Each electrophoresis system offers an advantage: the first method reveals the specificity of thioredoxin in the reduction of intramolecular vs. intermolecular disulfide bonds, whereas the second method improves the separation of the labeled proteins. By application of both methods to peanut seed extracts, we isolated at least 20 thioredoxin targets and identified E-three allergens (Ara h2, Ara h3, and **Ara h6**) and two proteins not known to occur in peanut (desiccation-related and seed maturation protein). These findings open the door to the identification of proteins targeted by thioredoxin in a wide range of systems, thereby enhancing our understanding of its function and extending its technological and medical applications.

L12 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2010 ACS ON STN

2001:320970 Document No. 135:225750 Four novel recombinant **peanut allergens**: more information, more problems. Becker, W. -M.; Kleber-Janke, T.; Lepp, U. (Forschungszentrum Borstel, Borstel, D-23845, Germany). International Archives of Allergy and Immunology, 124(1-3), 100-102 (English) 2001. CODEN: IAAIEG. ISSN: 1018-2438. Publisher: S. Karger AG.

AB An ideal method to clone the allergenic entities completely in peanuts is the phage display system where patients' IgE is the selection and enrichment agent. In this system, the presented allergen and its gene-containing phages are selected by patients' IgE using the panning method. The selected phages are multiplied in *Escherichia coli* and in the next cycle selected and enriched and so on. After five cycles, six different allergens were cloned. Two of them were the well-known major allergens of peanut, Ara h 1 and Ara h 2. Ara h 4, Ara h 5 (profilin), Ara h 6 and Ara h 7 are first described in their structure deduced from the DNA sequence. Ara h 4, Ara h 6 and Ara h 7 show significant sequence similarities to seed storage proteins, whereby Ara h 6 and 7 belong to the conglutin family. Ara h 3 is an isoform of Ara h 4 with 91% identity. An elegant way to overcome the expression problems of recombinant **peanut allergens** in *E. coli* was found. This opened the way to examining the question whether certain **peanut allergens** are associated with clin. symptoms and the severity of the clin. reactions. The fact that Ara h 6 was detected by the IgE of patients with shock symptoms and urticaria but not by the IgE of patients with an isolated oral allergy syndrome may be an indication that Ara h 6 is a candidate for association with severe clin. reactions.

L12 ANSWER 7 OF 7 MEDLINE on STN

DUPLICATE 2

1999406463. PubMed ID: 10474031. Selective cloning of **peanut allergens**, including profilin and 25 albumins, by phage display technology. Kleber-Janke T; Cramer R; Appenzeller U; Schlaak M; Becker W M. (Research Center Borstel, Germany.. tkleber@fz-borstel.de). International archives of allergy and immunology, (1999 Aug) Vol. 119, No. 4, pp. 265-74. Journal code: 9211652. ISSN: 1018-2438. L-ISSN: 1018-2438. Pub. country: Switzerland. Language: English.

AB BACKGROUND: Peanut kernels contain many allergens able to elicit IgE-mediated type 1 allergic reactions in sensitized individuals. Sera from sensitized patients recognize variable patterns of IgE-binding

proteins. The identification of the IgE-binding proteins of peanut extract would facilitate improvement of diagnostic and immunotherapeutic approaches as well as development of sensitive test systems for the detection of hidden **peanut allergens** present as additives in various industrial food products and the investigation of their stability during processing of food products. METHODS: We applied the pJufO cloning system based on the phage surface display of functional cDNA expression products to clone cDNAs encoding **peanut allergens**. Sera (n = 40) of peanut-allergic individuals were selected according to case history, radioallergosorbent test and immunoblot analysis to demonstrate IgE binding towards the newly identified recombinant allergens. RESULTS: In addition to the known allergens Ara h 1 and Ara h 2 we were able to identify four allergens with estimated molecular weights of 36, 16, 14.5 and 14 kDa. Three of them formally termed Ara h 4, **Ara h 6** and Ara h 7 show significant sequence similarities to the family of seed storage proteins and the fourth (Ara h 5) corresponds to the well-known plant allergen profilin. Immunoblotting of the six expressed recombinant allergens with 40 patients sera shows 14 individual recognition patterns and the following frequency of specific IgE binding: Ara h 1 was recognized by 65%, Ara h 2 by 85%, Ara h 4 by 53%, Ara h 5 by 13%, Ara h 6 by 38% and Ara h 7 by 43% of the selected sera. CONCLUSIONS: All of the selected peanut-positive sera can detect at least one of the six identified recombinant allergens which can be used to establish individual patients' reactivity profiles. A comparison of these profiles with the clinical data will possibly allow a further insight into the relationship between clinical severity of the symptoms and specific IgE levels towards the six **peanut allergens**.

=> s 19 and recombinant
L13 195 L9 AND RECOMBINANT

=> s 113 and conglutinin
L14 7 L13 AND CONGLUTININ

=> dup remove 114
PROCESSING COMPLETED FOR L14
L15 3 DUP REMOVE L14 (4 DUPLICATES REMOVED)

=> d 115 1-3 cbib abs

L15 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2010 ACS ON STN
2007:1052514 Document No. 147:384048 Modified vaccinia virus Ankara (MVA) encoding a **recombinant** allergen for the treatment of type I hypersensitivity in animals and humans. Albrecht, Melanie; Sutter, Gerd; Saez, Yasemin; Reese, Gerald; Vieths, Stefan; Staib, Caroline (Paul-Ehrlich-Institut Bundesamt fuer Sera und Impfstoffe, Germany). Eur. Pat. Appl. EP 1835031 A1 20070919, 40pp. DESIGNATED STATES: R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, YU. (English). CODEN: EPXXDW. APPLICATION: EP 2006-5164 20060314.

AB The present invention relates to the use of a **recombinant** modified vaccinia virus Ankara (MVA) comprising a heterologous nucleic acid for the production of a medicament for the prevention and/or treatment of type I hypersensitivity in a living animal including humans. The invention further relates to a **recombinant** modified vaccinia virus Ankara (MVA) comprising a heterologous nucleic acid, wherein the heterologous nucleic acid is incorporated into a non-essential region of the genome of the MVA, the heterologous nucleic acid is under the control of, e.g. a vaccinia virus-specific promoter and, the heterologous nucleic acid is selected from the group of nucleic acids encoding an allergen

selected from the group of weed pollens, grass pollens, tree pollens, mites, animals, fungi, insects, rubber, worms, human autoallergens, and foods.

- L15 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 1
2003475502. PubMed ID: 14550644. High-yield expression in *Escherichia coli*, purification, and characterization of properly folded major **peanut allergen** Ara h 2. Lehmann Katrin; Hoffmann Silke; Neudecker Philipp; Suhr Martin; Becker Wolf-Meinhard; Rosch Paul. (Lehrstuhl Biopolymere, Universität Bayreuth 30, Universitätsstrasse 30, 95440, Bayreuth, Germany.) Protein expression and purification, (2003 Oct) Vol. 31, No. 2, pp. 250-9. Journal code: 9101496. ISSN: 1046-5928. L-ISSN: 1046-5928. Pub. country: United States. Language: English.
- AB Allergic reactions to peanuts are a serious health problem because of their high prevalence, associated with potential severity, and chronicity. One of the three major allergens in peanut, Ara h 2, is a member of the **conglutin** family of seed storage proteins. Ara h 2 shows high sequence homology to proteins of the 2S albumin family. Presently, only very few structural data from allergenic proteins of this family exist. For a detailed understanding of the molecular mechanisms of food-induced allergies and for the development of therapeutic strategies knowledge of the high-resolution three-dimensional structure of allergenic proteins is essential. We report a method for the efficient large-scale preparation of properly folded Ara h 2 for structural studies and report CD-spectroscopic data. In contrast to other allergenic 2S albumins, Ara h 2 exists as a single continuous polypeptide chain in peanut seeds, and thus heterologous expression in *Escherichia coli* was possible. Ara h 2 was expressed as Trx-His-tag fusion protein in *E. coli* Origami (DE3), a modified *E. coli* strain with oxidizing cytoplasm which allows the formation of disulfide bridges. It could be shown that **recombinant** Ara h 2, thus overexpressed and purified, and the allergen isolated from peanuts are identical as judged from immunoblotting, analytical HPLC, and circular dichroism spectra.

- L15 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN
2001:320970 Document No. 135:225750 Four novel **recombinant peanut allergens**: more information, more problems. Becker, W. -M.; Kleber-Janke, T.; Lepp, U. (Forschungszentrum Borstel, Borstel, D-23845, Germany). International Archives of Allergy and Immunology, 124(1-3), 100-102 (English) 2001. CODEN: IAAIEG. ISSN: 1018-2438. Publisher: S. Karger AG.
- AB An ideal method to clone the allergenic entities completely in peanuts is the phage display system where patients' IgE is the selection and enrichment agent. In this system, the presented allergen and its gene-containing phages are selected by patients' IgE using the panning method. The selected phages are multiplied in *Escherichia coli* and in the next cycle selected and enriched and so on. After five cycles, six different allergens were cloned. Two of them were the well-known major allergens of peanut, Ara h 1 and Ara h 2. Ara h 4, Ara h 5 (profilin), Ara h 6 and Ara h 7 are first described in their structure deduced from the DNA sequence. Ara h 4, Ara h 6 and Ara h 7 show significant sequence similarities to seed storage proteins, whereby Ara h 6 and 7 belong to the **conglutin** family. Ara h 3 is an isoform of Ara h 4 with 91% identity. An elegant way to overcome the expression problems of **recombinant peanut allergens** in *E. coli* was found. This opened the way to examining the question whether certain **peanut allergens** are associated with clin. symptoms and the severity of the clin. reactions. The fact that Ara h 6 was detected by the IgE of patients with shock symptoms and urticaria but not by the IgE of patients with an isolated oral allergy syndrome may be an indication that Ara h 6 is a candidate for association with severe clin. reactions.

=> s E coli
 L16 512192 E COLI

=> s l16 and recombinant allergen
 L17 242 L16 AND RECOMBINANT ALLERGEN

=> s l17 and pd<20000406
 L18 104 L17 AND PD<20000406

=> s l18 and modified allergen
 L19 0 L8 AND MODIFIED ALLERGEN

=> s l18 and reduced IgE
 L20 0 L18 AND REDUCED IGE

=> s l18 and IgE
 L21 89 L18 AND IGE

=> s l21 and modified
 L22 1 L21 AND MODIFIED

=> d l22 cbib abs

L22 ANSWER 1 OF 1 MEDLINE on STN
 2000420411. PubMed ID: 10877820. Rapid production of the major birch pollen allergen Bet v 1 in *Nicotiana benthamiana* plants and its immunological in vitro and in vivo characterization. Krebitz M; Wiedermann U; Essl D; Steinkellner H; Wagner B; Turpen T H; Ebner C; Scheiner O; Breiteneder H. (Department of Pathophysiology, University of Vienna, Austria.) The FASEB journal : official publication of the Federation of American Societies for Experimental Biology, (2000 Jul) Vol. 14, No. 10, pp. 1279-88. Journal code: 8804484. ISSN: 0892-6638. L-ISSN: 0892-6638. Pub. country: United States. Language: English.

AB Type I allergies are immunological disorders that afflict a quarter of the world's population. Improved diagnosis of allergic diseases and the formulation of new therapeutic approaches are based on the use of **recombinant allergens**. We describe here for the first time the application of a rapid plant-based expression system for a plant-derived allergen and its immunological characterization. We expressed our model allergen Bet v 1, the major birch pollen allergen, in the tobacco-related species *Nicotiana benthamiana* using a tobacco mosaic virus vector. Two weeks postinoculation, plants infected with recombinant viral RNA containing the Bet v 1 coding sequence accumulated the allergen to levels of 200 microg/g leaf material. Total nonpurified protein extracts from plants were used for immunological characterizations. **IgE** immunoblots and ELISA (enzyme-linked immunoassay) inhibition assays showed comparable **IgE** binding properties for tobacco recombinant (r) Bet v 1 and natural (n) Bet v 1, suggesting that the B cell epitopes were preserved when the allergen was expressed in *N. benthamiana* plants. Using a murine model of type I allergy, mice immunized with crude leaf extracts containing Bet v 1 with purified rBet v 1 produced in **E. coli** or with birch pollen extract generated comparable allergen-specific **IgE** and IgG1 antibody responses and positive type I skin test reactions. These results demonstrate that nonpurified Bet v 1 overexpressed in *N. benthamiana* has the same immunogenicity as purified Bet v 1 produced in **E. coli** or nBet v 1. We therefore conclude that this plant expression system offers a viable alternative to fermentation-based production of allergens in bacteria or yeasts. In addition, there may be a broad utility of this system for the development of new and low-cost vaccination strategies against allergy.

=> s microbial delivery
L23 47 MICROBIAL DELIVERY

=> s l23 and peanut
L24 1 L23 AND PEANUT

=> d l24 cbib abs

L24 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN
2001:676622 Document No. 135:225857 **Microbial delivery**
system. Caplan, Michael (Panacea Pharmaceuticals, LLC, USA). PCT Int.
Appl. WO 2001066136 A2 20010913, 57 pp. DESIGNATED STATES: W: AE, AG,
AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE,
DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW:
AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR,
IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English).
CODEN: PTXXD2. APPLICATION: WO 2000-US33121 20001206. PRIORITY: US
2000-PV195035 20000306.

AB The present invention provides methods and compns. for treating or
preventing allergic responses, particularly anaphylactic allergic
responses, in subjects who are allergic to allergens or susceptible to
allergies. Methods of the present invention utilize administration of
microorganisms to subjects, where the microorganisms produce allergens and
protect the subjects from exposure to the allergens until phagocytosed by
antigen-presenting cells. Particularly preferred microorganisms are
gram-neg. bacteria, gram-pos. bacteria, and yeast. Particularly preferred
allergens are proteins found in foods, venoms, drugs and latex that elicit
allergic reactions and anaphylactic allergic reactions in individuals who
are allergic to the proteins or are susceptible to allergies to the
proteins. The proteins may also be modified to reduce the ability of the
proteins to bind and crosslink IgE antibodies and thereby reduce the risk
of eliciting anaphylaxis without affecting T-cell mediated Th1-type
immunity.

=> s l23 and allergen
L25 1 L23 AND ALLERGEN

=> d l25 cbib abs

L25 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN
2001:676622 Document No. 135:225857 **Microbial delivery**
system. Caplan, Michael (Panacea Pharmaceuticals, LLC, USA). PCT Int.
Appl. WO 2001066136 A2 20010913, 57 pp. DESIGNATED STATES: W: AE, AG,
AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE,
DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW:
AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR,
IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English).
CODEN: PTXXD2. APPLICATION: WO 2000-US33121 20001206. PRIORITY: US
2000-PV195035 20000306.

AB The present invention provides methods and compns. for treating or
preventing allergic responses, particularly anaphylactic allergic
responses, in subjects who are allergic to **allergens** or
susceptible to allergies. Methods of the present invention utilize

administration of microorganisms to subjects, where the microorganisms produce **allergens** and protect the subjects from exposure to the **allergens** until phagocytosed by antigen-presenting cells. Particularly preferred microorganisms are gram-neg. bacteria, gram-pos. bacteria, and yeast. Particularly preferred **allergens** are proteins found in foods, venoms, drugs and latex that elicit allergic reactions and anaphylactic allergic reactions in individuals who are allergic to the proteins or are susceptible to allergies to the proteins. The proteins may also be modified to reduce the ability of the proteins to bind and crosslink IgE antibodies and thereby reduce the risk of eliciting anaphylaxis without affecting T-cell mediated Th1-type immunity.

=> s (caplan m?/au or sampson h?/au or burks a?/au or burks w?/au or bottomly k?/au or sosin h?/au)

L26 6338 (CAPLAN M?/AU OR SAMPSON H?/AU OR BURKS A?/AU OR BURKS W?/AU OR BOTTOMLY K?/AU OR SOSIN H?/AU)

=> s L26 and E coli
L27 28 L26 AND E COLI

=> s L27 and allergen
L28 10 L27 AND ALLERGEN

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PROCESSING COMPLETED FOR L28
L29 5 DUP REMOVE L28 (5 DUPLICATES REMOVED)

=> d L29 1-5 cbib abs

L29 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN
2005:259357 Document No. 142:334946 Recombinant **allergens** with mutated IgE epitopes for treating anaphylaxis induced by food, venom, drug and latex **allergens**. Caplan, Michael J.; Bottomly, Kim H.; Sosin, Howard B.; Burks, A. Wesley; Sampson, Hugh A. (USA). U.S. Pat. Appl. Publ. US 20050063994 A1 20050324, 117 pp., Cont.-in-part of U.S. Ser. No. 100,303. (English). CODEN: USXXCO. APPLICATION: US 2004-899551 20040726. PRIORITY: US 2000-195035P 20000406; US 2000-731375 20001206; US 2002-100303 20020318.

AB The present invention provides methods and compns. for treating or preventing allergic reactions, particularly anaphylactic reactions. Methods of the present invention involve administering microorganisms to allergic subjects, where the microorganisms contain a recombinant version of the protein **allergen**. The recombinant version can be wild-type or may include mutations within IgE epitopes of the protein **allergen**. Preferably the compns. are administered rectally. Particularly preferred microorganisms are bacteria such as **E. coli**. Any **allergen** may be used in the inventive methods. Particularly preferred **allergens** are anaphylactic **allergens** including protein **allergens** found in foods, venoms, drugs and latex. The inventive compns. and methods are demonstrated in the treatment of peanut-induced anaphylaxis.

L29 ANSWER 2 OF 5 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
2005:536746 Document No.: PREV200510331749. Peanut **allergens** and methods. Burks,, A. Wesley [Inventor]; Stanley, J. Steven [Inventor]; Bannon, Gary A. [Inventor]; Cockrell, Gael [Inventor]; Helm, Ricki M. [Inventor]. Little Rock, AR USA. ASSIGNEE: University of Arkansas. Patent Info.: US 06835824 20041228. Official Gazette of the United States Patent and Trademark Office Patents, (DEC 28 2004) CODEN: OGPUPE7. ISSN: 0098-1133. Language: English.

- AB One of the major peanut **allergens**, Ara h I, was selected from cDNA expression library clones using Ara h I specific oligo-nucleotides and polymerase chain reaction technology. The Ara h I clone identified a 2.3 kb mRNA species on a Northern blot containing peanut poly A+RNA. DNA sequence analysis of the cloned inserts revealed that the Ara h I **allergen** has significant homology with the vicilin seed storage protein family found in most higher plants. The isolation of the Ara h I clones allowed the synthesis of this protein in **E. coli** cells and subsequent recognition of this recombinant protein in immunoblot analysis using serum IgE from patients with peanut hypersensitivity.
- L29 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1
2004:1121739 Document No. 142:278913 Sensitization and allergic response and intervention therapy in animal models. Helm, Ricki M.; **Burks, A. Wesley** (Department of Microbiology/Immunology, University of Arkansas for Medical Sciences/ACHRI/ACNC, Little Rock, AR, 72202-3591, USA). Journal of AOAC International, 87(6), 1441-1447 (English) 2004. CODEN: JAINEE. ISSN: 1060-3271. Publisher: AOAC International.
- AB A review is presented of 3 murine models and a swine neonatal model used to investigate immunotherapeutic options. In Model 1, mutation of linear IgE-binding epitopes of Ara h 1 for the preparation of a hypoallergenic Ara h 1 is discussed with respect to expression in transgenic tobacco plants and correct folding following expression in the pET16b construct. In Model 2, the mutations of Ara h 1 were assessed for use as an immunotherapeutic agent. Although some protective benefit was observed with the modified Ara h 1 protein, animals desensitized with heat-killed **E. coli** preps. showed increased protection to challenge. In Model 3, soybean homologs to peanut proteins were investigated to determine if soybean immunotherapy can potentially provide benefit to peanut-allergic subjects. Although some protection was provided, adnl. experimentation with respect to optimal doses for sensitization and challenge will need to be investigated. In Model 4, the neonatal swine model was used to profile different foods (low to moderate to high sensitizing) similar to food allergies in humans. Evidence suggests such feasibility; however, threshold levels for sensitization and allergic responses will need adnl. study. In summary, murine and swine animal models are being used to address immunotherapeutic avenues and investigation into the mechanisms of food-allergic sensitization.
- L29 ANSWER 4 OF 5 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN 1999:134462 Document No.: PREV199900134462. Modulation of the allergenicity of a major peanut **allergen**, Ara h 2 by mutagenesis of its immunodominant IgE binding epitopes. King, N. [Reprint author]; Maleki, S. J.; **Sampson, H.**; **Burks, A. W.** [Reprint author]; Bannon, G. A. [Reprint author]. Univ. Arkansas Med. Sci., Little Rock, AR 72201, USA. Journal of Allergy and Clinical Immunology, (Jan., 1999) Vol. 103, No. 1 PART 2, pp. S67. print. Meeting Info.: 55th Annual Meeting of the American Academy of Allergy, Asthma and Immunology. Orlando, Florida, USA. February 26-March 3, 1999. American Academy of Allergy, Asthma, and Immunology. CODEN: JACIBY. ISSN: 0091-6749. Language: English.
- L29 ANSWER 5 OF 5 MEDLINE on STN DUPLICATE 2
1996013631. PubMed ID: 7560062. Recombinant peanut **allergen** Ara h I expression and IgE binding in patients with peanut hypersensitivity. **Burks A W**; Cockrell G; Stanley J S; Helm R M; Bannon G A. (Department of Pediatrics, University of Arkansas for Medical Sciences, Little Rock 72205, USA.) The Journal of clinical investigation, (1995 Oct) Vol. 96, No. 4, pp. 1715-21. Journal code: 7802877. ISSN: 0021-9738. L-ISSN: 0021-9738. Report No.: NLM-PMC185807. Pub. country: United States. Language: English.

AB Peanut allergy is a significant health problem because of the frequency, the potential severity, and the chronicity of the allergic sensitivity. Serum IgE from patients with documented peanut hypersensitivity reactions and a peanut cDNA expression library were used to identify clones that encode peanut **allergens**. One of the major peanut **allergens**, Ara h I, was selected from these clones using Ara h I specific oligonucleotides and polymerase chain reaction technology. The Ara h I clone identified a 2.3-kb mRNA species on a Northern blot containing peanut poly (A)+ RNA. DNA sequence analysis of the cloned inserts revealed that the Ara h I **allergen** has significant homology with the vicilin seed storage protein family found in most higher plants. The isolation of the Ara h I clones allowed the synthesis of this protein in *E. coli* cells and subsequent recognition of this recombinant protein in immunoblot analysis using serum IgE from patients with peanut hypersensitivity. With the production of the recombinant peanut protein it will now be possible to address the pathophysiologic and immunologic mechanisms regarding peanut hypersensitivity reactions specifically and food hypersensitivity in general

=> s peanut allergen
L30 1631 PEANUT ALLERGEN

=> s l30 and "Ara h6"
L31 14 L30 AND "ARA H6"

=> s l31 and IgE epitope
L32 1 L31 AND IGE EPI TOPE

=> d l32 cbib abs

L32 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN
2010:703419 Bioinformatics comparison of **peanut allergen**
Ara h2 and Ara h6. Xia, Li-xin; Yan, Hao; Tang, Mu-jin; Zhu, Hai; Liu, Zhi-gang (College of Medicine State Key Laboratory of Respiratory Disease for Allergy, Shenzhen University, Shenzhen, 518060, Peop. Rep. China). Shenzhen Daxue Xuebao, Ligongban, 27(2), 241-245 (Chinese) 2010. CODEN: SDXLEX. ISSN: 1000-2618. Publisher: Shenzhen Daxue Xuebao, Bianjibu.

AB The allergens Ara h2 and Ara h6 are the most clin. relevant allergens of peanut allergies. Ara h2 can completely inhibit the IgE binding ability of Ara h6 while Ara h6 can only partially inhibit IgE epitope of Ara h2. Comparison between the primary and tertiary structures of Ara h2 and Ara h6 is carried out for the exploration of this mechanism. Ara h2 contains a unique fragment (from 60 to 73) which includes two of the three major linear IgE epitopes of Ara h2. A 3-D structure of Ara h2 is obtained by homol. modeling with Ara h6 as the template. When the structure of Ara h2 and Ara h6 are superposed, an extra outstretched anti-parallel β -sheet linked a loop (from 58 to 72) is found within the structure of Ara h2. It also contains the sequence encoding the above-mentioned two IgE epitopes. This study gives a explanation for the difference of Ara h2 and Ara h6 by comparison of primary and tertiary structures of Ara h2 and Ara h6. The explanation lays down the foundation for understanding of the mechanisms of peanut allergies and future development of hypoallergic vaccines.

=> s heat killed E coli

L33 323 HEAT KILLED E COLI

=> s l33 and allergy
L34 10 L33 AND ALLERGY

=> dup remove l34
PROCESSING COMPLETED FOR L34
L35 3 DUP REMOVE L34 (7 DUPLICATES REMOVED)

=> d l35 1-3 cbib abs

L35 ANSWER 1 OF 3 MEDLINE on STN DUPLICATE 1
2009745033. PubMed ID: 19833393. Attenuation of **allergy** to
ovomucoid in pigs by neonatal treatment with heat-killed *Escherichia coli*
or *E. coli* producing porcine IFN-gamma. Rupa Prithy; Schmied Julie; Lai
Serene; Wilkie Bruce N. (Department of Pathobiology, Ontario Veterinary
College, University of Guelph, Guelph, ON, Canada.) Veterinary immunology
and immunopathology, (2009 Nov 15) Vol. 132, No. 1, pp. 78-83. Electronic
Publication: 2009-09-24. Journal code: 8002006. E-ISSN: 1873-2534. L-ISSN:
0165-2427. Pub. country: Netherlands. Language: English.

AB Food **allergy** is epidemic and prompts investigation to reduce
allergic predisposition. It was hypothesized that heat-killed *Escherichia*
coli injected intramuscularly (im) with or without interferon gamma
(IFN-gamma), reduces neonatal susceptibility to experimental egg
allergy. Two litters of Yorkshire pigs were assigned to three
intramuscular treatment groups (four/group): control (PBS), **heat**
-killed E. coli with or without
IFN-gamma-expressing plasmid. Pigs were sensitized to ovomucoid (Ovm) by
intraperitoneal injection with cholera toxin. To assess induction of
allergy, pigs were fed egg white in yoghurt and assigned scores
for allergic signs. Significantly fewer pigs developed **allergy**
and passive cutaneous anaphylaxis in *E. coli* and *E. coli*+IFN-gamma vs
control groups. *E. coli*-treated pigs also had significantly lower
frequency of mean clinical scores. *E. coli* and *E. coli*+IFN-gamma groups
did not differ. Serum antibody associated with IgG (H & L), IgG(1),
IgG(2) or IgE all correlated but did not differ by treatment groups.
Thus, treatment of neonatal pigs with **heat-killed**
E. coli by im injection reduced susceptibility to
allergic sensitization with Ovm. Inclusion of the type-1 cytokine,
IFN-gamma, had no additional effect. Results indicate a method for
prophylaxis of **allergy** and suggest support for the "hygiene
hypothesis".

L35 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 2
2004:1121739 Document No. 142:278913 Sensitization and allergic response and
intervention therapy in animal models. Helm, Ricki M.; Burks, A. Wesley
(Department of Microbiology/Immunology, University of Arkansas for Medical
Sciences/ACHRI/ACNC, Little Rock, AR, 72202-3591, USA). Journal of AOAC
International, 87(6), 1441-1447 (English) 2004. CODEN: JAINEE. ISSN:
1060-3271. Publisher: AOAC International.

AB A review is presented of 3 murine models and a swine neonatal model used
to investigate immunotherapeutic options. In Model 1, mutation of linear
IgE-binding epitopes of Ara h 1 for the preparation of a hypoallergenic Ara h 1
is discussed with respect to expression in transgenic tobacco plants and
correct folding following expression in the pET16b construct. In Model 2,
the mutations of Ara h 1 were assessed for use as an immunotherapeutic
agent. Although some protective benefit was observed with the modified Ara h
1 protein, animals desensitized with **heat-killed**
E. coli preps. showed increased protection to
challenge. In Model 3, soybean homologs to peanut proteins were
investigated to determine if soybean immunotherapy can potentially provide
benefit to peanut-allergic subjects. Although some protection was

provided, addnl. experimentation with respect to optimal doses for sensitization and challenge will need to be investigated. In Model 4, the neonatal swine model was used to profile different foods (low to moderate to high sensitizing) similar to food **allergies** in humans. Evidence suggests such feasibility; however, threshold levels for sensitization and allergic responses will need addnl. study. In summary, murine and swine animal models are being used to address immunotherapeutic avenues and investigation into the mechanisms of food-allergic sensitization.

L35 ANSWER 3 OF 3 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN 2004:229282 Document No.: PREV200400229798. Generation of **heat-killed E. coli** expressing cow milk proteins for immunotherapy regimen for the milk allergic mice. Grishin, A. [Reprint Author]; Srivastava, K. [Reprint Author]; Sampson, H. [Reprint Author]; Li, X. [Reprint Author]. Pediatrics, Mount Sinai School of Medicine, New York, NY, USA. Journal of Allergy and Clinical Immunology, (February 2004) Vol. 113, No. 2 Supplement, pp. S325. print. Meeting Info.: 60th Annual Meeting of the American Academy of Allergy, Asthma and Immunology (AAAAI). San Francisco, CA, USA. March 19-23, 2004. American Academy of Allergy, Asthma and Immunology. CODEN: JACIBY. ISSN: 0091-6749. Language: English.

=> s L33 and allergen
L36 3 L33 AND ALLERGEN

=> dup remove L36
PROCESSING COMPLETED FOR L36
L37 2 DUP REMOVE L36 (1 DUPLICATE REMOVED)

=> d L37 1-2 cbib abs

L37 ANSWER 1 OF 2 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN 2010:38192 Document No.: PREV201000038192. Attenuation of allergy to ovomucoid in pigs by neonatal treatment with heat-killed *Escherichia coli* or E-coli producing porcine IFN-gamma. Rupa, Prithy; Schmied, Julie; Lai, Serene; Wilkie, Bruce N. [Reprint Author]. Univ Guelph, Ontario Vet Coll, Dept Pathobiol, Guelph, ON N1G 2W1, Canada. bwilkie@uoguelph.ca. Veterinary Immunology and Immunopathology, (NOV 15 2009) Vol. 132, No. 1, Sp. Iss. 1, pp. 78-83. CODEN: VIIMDS. ISSN: 0165-2427. Language: English.

AB Food allergy is epidemic and prompts investigation to reduce allergic predisposition. It was hypothesized that heat-killed *Escherichia coli* injected intramuscularly (im) with or without interferon gamma (IFN-gamma), reduces neonatal susceptibility to experimental egg allergy. Two litters of Yorkshire pigs were assigned to three intramuscular treatment groups (four/group): control (PBS), **heat-killed E coli** with or without IFN-gamma-expressing plasmid. Pigs were sensitized to ovomucoid (Ovm) by intraperitoneal injection with cholera toxin. To assess induction of allergy, pigs were fed egg white in yoghurt and assigned scores for allergic signs. Significantly fewer pigs developed allergy and passive cutaneous anaphylaxis in E. coli and E. coli + IFN-gamma vs control groups. E. coli-treated pigs also had significantly lower frequency of mean clinical scores. E. coli and E. coli + IFN-gamma groups did not differ. Serum antibody associated with IgG (H & L), IgG(1), IgG(2) or IgE all correlated but did not differ by treatment groups. Thus, treatment of neonatal pigs with **heat-killed E coli** by im injection reduced susceptibility to allergic sensitization with Ovm. Inclusion of the type-1 cytokine, IFN-gamma, had no additional effect. Results indicate a method for prophylaxis of

allergy and suggest support for the "hygiene hypothesis". (C) 2009 Elsevier B.V. All rights reserved.

L37 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1
2004:1121739 Document No. 142:278913 Sensitization and allergic response and intervention therapy in animal models. Helm, Ricki M.; Burks, A. Wesley (Department of Microbiology/Immunology, University of Arkansas for Medical Sciences/ACHRI/ACNC, Little Rock, AR, 72202-3591, USA). Journal of AOAC International, 87(6), 1441-1447 (English) 2004. CODEN: JAINEE. ISSN: 1060-3271. Publisher: AOAC International.

AB A review is presented of 3 murine models and a swine neonatal model used to investigate immunotherapeutic options. In Model 1, mutation of linear IgE-binding epitopes of Ara h 1 for the preparation of a hypoallergenic Ara h 1 is discussed with respect to expression in transgenic tobacco plants and correct folding following expression in the pET16b construct. In Model 2, the mutations of Ara h 1 were assessed for use as an immunotherapeutic agent. Although some protective benefit was observed with the modified Ara h 1 protein, animals desensitized with **heat-killed E. coli** preps. showed increased protection to challenge. In Model 3, soybean homologs to peanut proteins were investigated to determine if soybean immunotherapy can potentially provide benefit to peanut-allergic subjects. Although some protection was provided, addnl. experimentation with respect to optimal doses for sensitization and challenge will need to be investigated. In Model 4, the neonatal swine model was used to profile different foods (low to moderate to high sensitizing) similar to food allergies in humans. Evidence suggests such feasibility; however, threshold levels for sensitization and allergic responses will need addnl. study. In summary, murine and swine animal models are being used to address immunotherapeutic avenues and investigation into the mechanisms of food-allergic sensitization.

=> s 133 and vaccine
L38 17 L33 AND VACCINE

=> s 138 and pd<20000406
L39 16 L38 AND PD<20000406

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PROCESSING COMPLETED FOR L39
L40 8 DUP REMOVE L39 (8 DUPLICATES REMOVED)

=> s 140 and Th1
L41 1 L40 AND TH1

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L41 ANSWER 1 OF 1 MEDLINE on STN
1996101747. PubMed ID: 7494229. Induction of T-cell immunity against Ras oncoproteins by soluble protein or Ras-expressing Escherichia coli. Fenton R G; Keller C J; Hanna N; Taub D D. (Division of Clinical Sciences, National Cancer Institute, National Cancer Institute-Frederick Cancer Research and Development Center (NCI-FCRDC), MD 21702, USA.) Journal of the National Cancer Institute, (1995 Dec 20) Vol. 87, No. 24, pp. 1853-61. Journal code: 7503089. ISSN: 0027-8874. L-ISSN: 0027-8874. Pub. country: United States. Language: English.

AB BACKGROUND: Point mutations in the ras proto-oncogene that activate its oncogenic potential occur in approximately 30% of human cancers. Previous studies have demonstrated that T-cell immunity against some forms of mutant Ras proteins could be elicited, and some effectiveness against tumors expressing activated Ras has been reported. PURPOSE: The goal of this study was to determine if immunization of mice with two forms of

mutant Ras protein can induce high levels of Ras mutation-specific T-cell immunity in vitro and tumor regression in vivo. METHODS: Mice (BALB/c or C3H/HeJ) were immunized subcutaneously at 2-week intervals with purified Ras oncoproteins mixed with the immunologic adjuvants Antigen Formulation or QS-21, both of which have been shown to enhance the induction of T-cell-mediated immunity when included as components of soluble protein **vaccines**. In some experiments, mice were immunized directly with heat-killed *Escherichia coli* that had been induced to express one of the mutant Ras proteins. Spleen cells plus lymph node cells from Ras-immunized mice were tested in vitro for lysis of syngeneic Ras-expressing tumor cells and proliferation in response to mutant Ras peptides. For some of the cytolytic activity experiments, the spleen cells were grown under **TH1** conditions (growth in presence of interleukin 2, interferon gamma, and an antibody directed against interleukin 4 to stimulate a cell-mediated immune response) or **TH2** conditions (growth in presence of interleukins 2 and 4 to stimulate a humoral immune response). The specificity of immunity was examined in vivo by challenge of Ras-immunized mice with syngeneic tumor cells expressing mutant Ras oncoproteins (HaBalb, i.e., BALB/c mouse cells expressing Ras with arginine substituted at amino acid position 12 [Arg 12 Ras]; C3HL61, i.e., C3H/HeJ mouse cells expressing Ras with leucine substituted at position 61 [Leu 61 Ras]). Ten mice per group were used in each experiment. RESULTS: Proliferative and cytolytic T-cell responses directed against the Arg 12 Ras protein were generated in BALB/c mice, resulting in protection against challenge with cells expressing Arg 12 Ras and therapeutic benefit in mice bearing established tumors expressing this protein. In C3H/HeJ mice, high levels of cytolytic and proliferative responses were induced against Leu 61 Ras. Immunization with **heat-killed E. coli** genetically engineered to express Leu 61 Ras also led to the induction of anti-Ras T-cell immunity. T cells grown under **TH1** conditions were cytolytic against Ras-transformed tumor cells, whereas those grown under **TH2** conditions were not. CONCLUSIONS: Immunization as described here leads to Ras mutation-specific antitumor immunity in vitro and in vivo, with therapeutic efficacy in an established tumor model.

=> d 140 1-8 cbib abs

L40 ANSWER 1 OF 8 MEDLINE on STN DUPLICATE 1
 1996101747. PubMed ID: 7494229. Induction of T-cell immunity against Ras oncoproteins by soluble protein or Ras-expressing *Escherichia coli*. Fenton R G; Keller C J; Hanna N; Taub D D. (Division of Clinical Sciences, National Cancer Institute, National Cancer Institute-Frederick Cancer Research and Development Center (NCI-FCRDC), MD 21702, USA.) Journal of the National Cancer Institute, (1995 Dec 20) Vol. 87, No. 24, pp. 1853-61. Journal code: 7503089. ISSN: 0027-8874. L-ISSN: 0027-8874. Pub. country: United States. Language: English.

AB BACKGROUND: Point mutations in the ras proto-oncogene that activate its oncogenic potential occur in approximately 30% of human cancers. Previous studies have demonstrated that T-cell immunity against some forms of mutant Ras proteins could be elicited, and some effectiveness against tumors expressing activated Ras has been reported. PURPOSE: The goal of this study was to determine if immunization of mice with two forms of mutant Ras protein can induce high levels of Ras mutation-specific T-cell immunity in vitro and tumor regression in vivo. METHODS: Mice (BALB/c or C3H/HeJ) were immunized subcutaneously at 2-week intervals with purified Ras oncoproteins mixed with the immunologic adjuvants Antigen Formulation or QS-21, both of which have been shown to enhance the induction of T-cell-mediated immunity when included as components of soluble protein **vaccines**. In some experiments, mice were immunized directly with heat-killed *Escherichia coli* that had been induced to express one of the

mutant Ras proteins. Spleen cells plus lymph node cells from Ras-immunized mice were tested in vitro for lysis of syngeneic Ras-expressing tumor cells and proliferation in response to mutant Ras peptides. For some of the cytolytic activity experiments, the spleen cells were grown under TH1 conditions (growth in presence of interleukin 2, interferon gamma, and an antibody directed against interleukin 4 to stimulate a cell-mediated immune response) or TH2 conditions (growth in presence of interleukins 2 and 4 to stimulate a humoral immune response). The specificity of immunity was examined in vivo by challenge of Ras-immunized mice with syngeneic tumor cells expressing mutant Ras oncoproteins (HaBab, i.e., BALB/c mouse cells expressing Ras with arginine substituted at amino acid position 12 [Arg 12 Ras]; C3H/61, i.e., C3H/HeJ mouse cells expressing Ras with leucine substituted at position 61 [Leu 61 Ras]). Ten mice per group were used in each experiment. RESULTS: Proliferative and cytolytic T-cell responses directed against the Arg 12 Ras protein were generated in BALB/c mice, resulting in protection against challenge with cells expressing Arg 12 Ras and therapeutic benefit in mice bearing established tumors expressing this protein. In C3H/HeJ mice, high levels of cytolytic and proliferative responses were induced against Leu 61 Ras. Immunization with **heat-killed E. coli** genetically engineered to express Leu 61 Ras also led to the induction of anti-Ras T-cell immunity. T cells grown under TH1 conditions were cytolytic against Ras-transformed tumor cells, whereas those grown under TH2 conditions were not. CONCLUSIONS: Immunization as described here leads to Ras mutation-specific antitumor immunity in vitro and in vivo, with therapeutic efficacy in an established tumor model.

L40 ANSWER 2 OF 8 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN 1985:233270 Document No.: PREV198579013266; BA79:13266. IMMUNOCONGLUTININ LEVELS IN CHICKS VACCINATED WITH SALMONELLA-GALLINARUM 9R SALMONELLA-PULLORUM E-79 OR ESCHERICHIA-COLI 020 **VACCINES** AND EXPERIMENTALLY INFECTED WITH SALMONELLA-GALLINARUM. JAISWAL T N [Reprint author]; MITTAL K R. COLLEGE OF VET SCIENCE AND ANIMAL HUSBANDRY, GUJARAT AGRIC UNIVERSITY, SK NAGAR, DANTIWADA, BANASKANTHA-395 506. Indian Veterinary Medical Journal, (1984) Vol. 8, No. 1, pp. 9-13. CODEN: IVMJDL. ISSN: 0250-5266. Language: ENGLISH.

AB Vaccination of chicks with live *S. gallinarum* (9R) **vaccines** with or without adjuvant caused an initial fall in the levels of pre-existing autostimulated immunoconglutinin (IK) by the 10th day but a slow increase in the IK level by 21st day postvaccination. Heat-killed *S. pullorum* (E79) and **heat-killed E. coli** (020) **vaccines** caused no such reduction in the IK level during the post-vaccination period. An increase in the IK level during post-vaccination period in these groups of chickens were observed. Challenge infection with *S. gallinarum* (V) in all the vaccinated groups of birds showed a marked decrease in IK level during the early challenge period indicating the involvement of IK in the host parasite reaction. The IK level increased by the 21st day post-challenge. Evidently, involvement of IK may help in host defense only in initial stages but eventually fail to protect chicks against *S. gallinarum* infection when the causative agent manages to enter the cells when both specific antibodies and nonspecific serum factor like IK fail to be effective.

L40 ANSWER 3 OF 8 MEDLINE on STN DUPLICATE 2 1982190380. PubMed ID: 7042755. Induction of immunity against lethal Haemophilus influenzae type b infection by Escherichia coli core lipopolysaccharide. Marks M I; Ziegler E J; Douglas H; Corbeil L B; Braude A I. The Journal of clinical investigation, (1982 Apr) Vol. 69, No. 4, pp. 742-9. Journal code: 7802877. ISSN: 0021-9738. L-ISSN: 0021-9738.

Report No.: NLM-PMC370127. Pub. country: United States. Language: English. AB Efforts to prevent Haemophilus influenzae type b (HIB) infections in

infancy have been hampered by the low immunogenicity of capsular polysaccharide **vaccines** in children younger than 18 mos. In searching for alternate immunogens, we have studied the protective potential of polysaccharide-poor, lipid-rich endotoxin (LPS) core in experimental HIB infections. Because all gram-negative bacteria have similar LPS core structures, we were able to use as **vaccine** the J5 mutant of *Escherichia coli* 0111, the LPS of which consists only of core components, and thus to avoid problems in interpretation arising from **vaccine** contamination with non-LPS HIB immunogens. Mice were given graded inocula of HIB and developed lethal infection analogous to human HIB disease when virulence was enhanced with mucin and hemoglobin. After active immunization with **heat-killed E. coli** J5, 40/50 (80%) of infected mice survived, compared with 14/50 (28%) of saline-immunized controls (P less than 0.005). Passive immunization with rabbit antiserum against *E. coli* J5 prevented lethal HIB infection when administered 24 or 72 h before or 3 h after infection. This protection was abolished by adsorption of antiserum with purified J5 LPS, with survival reduced from 14/24 to 0/24 (P less than 0.005). Furthermore, rabbit antiserum to purified J5 LPS gave just as potent protection against death as antiserum to whole J5 cells. These studies demonstrate that immunity to core LPS confers protection against experimental murine HIB infection and provide the framework for a new approach to prevention of human disease from HIB.

- L40 ANSWER 4 OF 8 MEDLINE on STN DUPLICATE 3
 1981281536. PubMed ID: 7023456. Consequences of active or passive immunization of turkeys against *Escherichia coli* 078. Arp L H. Avian diseases, (1980 Oct-Dec) Vol. 24, No. 4, pp. 808-15. Journal code: 0370617. ISSN: 0005-2086. L-ISSN: 0005-2086. Pub. country: United States. Language: English.
- AB Turkeys were injected at 7 and 14 days of age with live, heat-killed or formalin-killed *Escherichia coli* 078. Other turkeys were passively immunized at 22 days of age with hyperimmune serum produced against live or **heat-killed E. coli** 078. All turkeys were challenged at 24 days of age with *E. coli* 078. Turkeys immunized intramuscularly or intratracheally with live *E. coli* 078 were protected from death, whereas few turkeys given killed *E. coli* 078 were protected. Passively immunized turkeys were protected from death regardless of whether live or **heat-killed E. coli** 078 was used to produce the hyperimmune serum. Most turkeys that survived challenge developed septic polysynovitis 2--4 days after challenge.
- L40 ANSWER 5 OF 8 MEDLINE on STN
 1976189304. PubMed ID: 818014. Antiviral activity of *Brucella abortus* preparations; separation of active components. Feingold D S; Keleti G; Youngner J S. Infection and immunity, (1976 Mar) Vol. 13, No. 3, pp. 763-7. Journal code: 0246127. ISSN: 0019-9567. L-ISSN: 0019-9567. Report No.: NLM-PMC420675. Pub. country: United States. Language: English.
- AB Injection into mice of heat-killed *Brucella abortus* or aqueous ether-extracted *B. abortus* (Bru-pel) induced a "virus-type" interferon response, with peak titers at 6.5 h. The animals also were protected against challenge with otherwise lethal doses of Semliki forest virus. Extraction of either heated *B. abortus* or BRU-PEL with a mixture of chloroform-methanol (2:1, vol/vol) (C-M) yielded an insoluble residue (extracted cells) and a C-M extract. Neither extracted cells nor C-M extract alone induced interferon or afforded protection against Semliki forest virus infection in mice. Full interferon-inducing and protective activity was restored when extracted cells were recombined with C-M extract. C-M extract from heat-killed *Escherichia coli* also was effective in restoring activity to extracted *Brucella* cells. Neither **heat-killed E. coli** nor its C-M extract was

active, nor was C-M extracted *E. coli* recombined with the C-M extract from *B. abortus*. These results suggest that the interferon-inducing and antiviral protective properties of *B. abortus* are constituted of a C-M-extractable component that is common to *B. abortus* and *E. coli* and an unextractable component that is unique to *B. abortus*.

L40 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

1974:567727 Document No. 81:167727 Original Reference No. 81:25959a,25962a
Intestinal antibody secretion in the young pig in response to oral immunization with *Escherichia coli*. Porter, P.; Kenworthy, R.; Noakes, D. E.; Allen, W. D. (Unilever Res., Sharnbrook/Bedford, UK). *Immunology*, 27(5), 841-53 (English) 1974. CODEN: IMMUAJ. ISSN: 0019-2805.

AB Intestinal immunoglobulins and antibodies in the local immune response to *E. coli* O somatic antigens was studied in young fistulated pigs. Antibody levels in intestinal secretion were raised for approx. 2-3 weeks following a single local antigenic challenge with a heat-killed aqueous suspension of *E. coli*. A 2nd challenge provoked a similar response suggesting a lack of immunol. memory. Antibody activity in the secretions was predominantly associated with IgA and immunofluorescent studies of biopsy specimens from these pigs indicated that intestinal synthesis and secretion of IgA had begun by the 10th day of life. Studies of piglets reared with the sow indicated that oral immunization with *E. coli* antigen after 10 days of age stimulated intestinal antibody secretion before weaning at 3 weeks. The response of gnotobiotic pigs to oral immunization and infection was evaluated by immunofluorescent histol. of the intestinal mucosa. Repeated oral administration of **heat-killed *E. coli* O8** gave an immunocyte response in the lamina propria numerically comparable with that produced by infection. The early response was dominated by cells of the IgM class whereas after 3 weeks IgA cells predominated. In the germ-free animal very few immunoglobulin-containing cells were detected. In vitro studies of antibacterial activity indicated that the most probable mechanism of immunol. control in the alimentary tract is bacteriostasis.

L40 ANSWER 7 OF 8 EMBASE COPYRIGHT (c) 2010 Elsevier B.V. All rights reserved on STN

1975027648 EMBASE The effect of active immunisation on ascending pyelonephritis in the rat.
Radford, N.J.; Chick, S.; Ling, R.; et. al.. KRUF Inst. Ren. Dis., Welsh Nat. Sch. Med., Roy. Infirm., Cardiff, United Kingdom.
Journal of Pathology Vol. 112, No. 3, pp. 169-175 1974.
ISSN: 0022-3417. CODEN: JPBAA7. Language: English.

AB In the rat, active immunization with **heat killed *E. coli* serotype 078 vaccine** produced a high titer of IgM anti O antibody after 14 days. At this time, lower titers of IgG anti O antibodies were found in some of the animals. These antibodies did not prevent bacterial invasion of the kidney nor did they affect the incidence or severity of the renal scarring following ascending infection with *E. coli* serotype 078. Fourteen days after immunization with a formalin killed **vaccine** very high titers of IgM and IgG anti K antibodies were noted; these were in excess of 1 in 5120. It was shown that these antibodies reduced the severity but not the frequency of renal scarring following ascending *E. coli* infection.

L40 ANSWER 8 OF 8 MEDLINE on STN

DUPLICATE 4

1971078403. PubMed ID: 4923787. [Oral immunization against coli enteritis with streptomycin-dependent *E. coli*. V. Different efficiency of live Sm-d and **heat killed *E. coli* O111 B4 vaccine** in settling of the homologous Sm-r strain in mice with antibiotic sterilized intestine]. Untersuchungen zur oralen Immunisierung gegen Coli-Enteritis mit Streptomycin-dependenden Coli-Keimen. V. Unterschiedliche Wirksamkeit von Impfstoffen aus lebenden

Streptomycin-dependenten und hitzeabgetöteten EC-0111 B4-Bakterien auf die Hemmung der Ansiedlung des homologen Streptomycin-resistenten Stammes bei darmsterilen Mäusen. Lindek; Koch H. Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. 1. Abt. Medizinisch-hygienische Bakteriologie, Virusforschung und Parasitologie. Originale, (1970) Vol. 215, No. 3, pp. 286-95. Journal code: 0337744. ISSN: 0372-8110. L-ISSN: 0372-8110. Pub. country: GERMANY, WEST: Germany, Federal Republic of. Language: German.

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L42 1455 VACCINE CARRIER

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L43 0 L42 AND KILLED E COLI

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L47 195965 ALLERGEN

=> s l47 and IgE epitope
L48 1305 L47 AND IGE EPIOTOPE

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L49 48 L48 AND MUTATED

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L50 10 L49 AND E COLI

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L51 3 DUP REMOVE L50 (7 DUPLICATES REMOVED)

=> d l51 1-3 cbib abs

L51 ANSWER 1 OF 3 MEDLINE on STN DUPLICATE 1
2010365893. PubMed ID: 20414052. Expression of the recombinant major allergen of Salsola kali pollen (Sal k 1) and comparison with its low-immunoglobulin E-binding mutant. Assarehzadegan Mohammad Ali; Sankian Mojtaba; Jabbari Farahzad; Tehrani Mohsen; Varasteh AbdolReza. (Immunology Department, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Mashhad, Iran.) Allergology international : official journal of the Japanese Society of Allergology, (2010 Jun) Vol. 59, No. 2, pp. 213-22. Electronic Publication: 2010-04-24. Journal code: 9616296. E-ISSN: 1440-1592. L-ISSN: 1323-8930. Pub. country: Japan. Language: English.

AB BACKGROUND: The inhalation of Salsola kali pollen is an important cause of pollinosis during summer and early fall throughout desert and semi-desert areas. Sal k 1 has been previously reported as a major allergen of S. kali pollen. In this study, we produced the recombinant Sal k 1 and also its low IgE-binding mutant form. We further compared the IgE binding ability of these two recombinant molecules. METHODS: The recombinant Sal k 1 and its low IgE-binding variant, obtained by three amino acid exchanges (R(142)-->S, P(143)-->A, D(144)-->V), were cloned and expressed

in *E. coli*, as proteins fused with thioredoxin and His-tags, and then purified by Ni²⁺ affinity chromatography. The IgE-binding capacity of the wild-type and **mutated** rSal k 1 was compared using immunoblotting, ELISA and inhibition assays by ten sera from S. Kali allergic patients. Moreover, in vivo IgE-reactivity was investigated by the skin prick test. RESULTS: Both the recombinant and the **mutated** form of Sal k 1 were expressed in *E. coli* at a relatively high amount and soluble form. All sera recognized rSal k 1 via immunoassay analysis. In addition, inhibition assays demonstrated that the purified rSal k 1 was similar to its counterpart in the crude extract. The **mutated** rSal k 1 exhibited a reduced IgE-binding capacity against wild-type rSal k 1. CONCLUSIONS: This study demonstrates that purified rSal k 1 is comprised of **IgE-epitopes** similar to that of its natural counterpart and that the **mutated** variant showed a reduced IgE-binding capacity based on in vitro assays and in vivo provocation testing.

- L51 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 2
2007267167. PubMed ID: 17475857. A recombinant hypoallergenic parvalbumin mutant for immunotherapy of IgE-mediated fish allergy. Swoboda Ines; Bugajska-Schretter Agnes; Linhart Birgit; Verdino Petra; Keller Walter; Schulmeister Ulrike; Sperr Wolfgang R; Valent Peter; Peltre Gabriel; Quirce Santiago; Douladiris Nikolaos; Papadopoulos Nikolaos G; Valenta Rudolf; Spitzauer Susanne. (Institute of Medical and Chemical Laboratory Diagnostics, Department of Pathophysiology, Center for Physiology and Pathophysiology, Medical University of Vienna, Austria.. ines.swoboda@meduniwien.ac.at) . Journal of immunology (Baltimore, Md. : 1950), (2007 May 15) Vol. 178, No. 10, pp. 6290-6. Journal code: 2985117R. ISSN: 0022-1767. L-ISSN: 0022-1767. Pub. country: United States. Language: English.
- AB IgE-mediated allergy to fish is a frequent cause of severe anaphylactic reactions. Parvalbumin, a small calcium-binding protein, is the major fish **allergen**. We have recently isolated a cDNA coding for carp parvalbumin, Cyp c 1, and expressed in *Escherichia coli* a recombinant Cyp c 1 molecule, which contained most **IgE epitopes** of saltwater and freshwater fish. In this study, we introduced mutations into the calcium-binding domains of carp parvalbumin by site-directed mutagenesis and produced in *E. coli* three parvalbumin mutants containing amino acid exchanges either in one (single mutants; Mut-CD and Mut-EF) or in both of the calcium-binding sites (double mutant; Mut-CD/EF). Circular dichroism analyses of the purified derivatives and the wild-type **allergen** showed that Mut-CD/EF exhibited the greatest reduction of overall protein fold. Dot blot assays and immunoblot inhibition experiments performed with sera from 21 fish-allergic patients showed that Mut-CD/EF had a 95% reduced IgE reactivity and represented the derivative with the least allergenic activity. The latter was confirmed by in vitro basophil histamine release assays and in vivo skin prick testing. The potential applicability for immunotherapy of Mut-CD/EF was demonstrated by the fact that mouse IgG Abs could be raised by immunization with the **mutated** molecule, which cross-reacted with parvalbumins from various fish species and inhibited the binding of fish-allergic patients' IgE to the wild-type **allergen**. Using the hypoallergenic carp parvalbumin mutant Mut-CD/EF, it may be possible to treat fish allergy by immunotherapy.

- L51 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN
2005:259357 Document No. 142:334946 Recombinant **allergens** with **mutated IgE epitopes** for treating anaphylaxis induced by food, venom, drug and latex **allergens**. Caplan, Michael J.; Bottomly, Kim H.; Sosin, Howard B.; Burks, A. Wesley; Sampson, Hugh A. (USA). U.S. Pat. Appl. Publ. US 20050063994 A1 20050324, 117 pp.,

Cont.-in-part of U.S. Ser. No. 100,303. (English). CODEN: USXXCO.
APPLICATION: US 2004-899551 20040726. PRIORITY: US 2000-195035P 20000406;
US 2000-731375 20001206; US 2002-100303 20020318.

AB The present invention provides methods and compns. for treating or preventing allergic reactions, particularly anaphylactic reactions. Methods of the present invention involve administering microorganisms to allergic subjects, where the microorganisms contain a recombinant version of the protein **allergen**. The recombinant version can be wild-type or may include mutations within **IgE epitopes** of the protein **allergen**. Preferably the compns. are administered rectally. Particularly preferred microorganisms are bacteria such as **E. coli**. Any **allergen** may be used in the inventive methods. Particularly preferred **allergens** are anaphylactic **allergens** including protein **allergens** found in foods, venoms, drugs and latex. The inventive compns. and methods are demonstrated in the treatment of peanut-induced anaphylaxis.

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---Logging off of STN---

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	172.12	172.34
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-15.30	-15.30

STN INTERNATIONAL LOGOFF AT 14:00:08 ON 08 SEP 2010